4.2 BIOLOGICAL RESOURCES

Biological resources include vegetation, wildlife habitats, wetlands, aquatic biology, wildlife species, and threatened and endangered species. This section describes Project impacts to the plant communities and wildlife that occur along the proposed pipeline route, including special status species and species with commercial and recreational importance.

4.2.1 Environmental Setting

The pipeline is co-located with other pipelines for much of its length in an established and previously disturbed corridor. Starting in the west, at Wheeler Ridge, Line 1903 traverses east approximately 22 miles of the San Joaquin Valley, which consists primarily of agricultural lands, including crops and livestock grazing. The pipeline crosses the Tehachapi range from approximately MP 22.5 through MP 50. At the western end of the Tehachapi Mountains, the pipeline goes through rural subdivisions and residential areas, including horse pastures, livestock corrals, and small orchards. At the eastern end of the Tehachapi Mountains, the pipeline is co-located with windfarms. From approximately MP 50 to the towns of Amboy and Cadiz, the pipeline crosses the Mojave Desert, approximately parallel with Highway 58 and old Route 66. Near the Riverside-San Bernardino County line, at approximately MP 258, the vegetation transitions to Sonoran Desert vegetation. The transition between the two deserts is subtle because the dominant vegetation is identical and there is no defining topography. In the area around Blythe (approximately MP 293 through MP 303), the pipeline crosses agricultural fields and irrigation canals. (Figure 4.2-1).

Two major vegetation categories have been observed within the Project construction locations: (1) native vegetation, which may include substantial cover by exotic species, but has not been directly altered; and (2) significantly altered vegetation. These two major vegetation categories have been further defined and delineated. Native vegetation within the construction locations includes nine specific vegetation cover types: annual grassland, big sagebrush scrub, Mojave creosote bush scrub, desert saltbush/sink scrub, Joshua tree woodland, Sonoran creosote bush scrub, willow scrub, desert dry wash woodland, and tamarisk scrub (riparian woodland). The native vegetation types are being used primarily for grazing. The significantly altered vegetation has been categorized further into three specific vegetation cover types: previously disturbed ROW, cultivated croplands, and residential lands.

Vegetation Communities and Other Habitats

Upland

Annual Grassland

Annual grassland (Grassland) consists of a dense to sparse cover of mostly non-native annual grasses, often associated with native wildflowers (Holland 1986). Dominant species include foxtail chess (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild oat (*Avena* spp.), and filaree (*Erodium* spp.). Native wildflowers frequently present include popcorn flower (*Plagiobothrys* spp.) and fiddlehead (*Amsinckia menziesii*). Annual grassland occurs from about sea level to 3,500 feet in the interior valleys. It is present on the ROW from MP 14 in the San Joaquin Valley to approximately MP 45 at the beginning of the Mojave Desert. Within the Tehachapi Mountains, the ROW traverses oak woodland or savannah with an understory of annual non-native grassland. No oak woodland occurs on the ROW itself, because trees were removed in the corridor when the pipeline was originally constructed. The oak woodland areas are within habitats classified as residential (EPNG 2003b).

Big Sagebrush Scrub

Big sagebrush scrub is widely distributed east of the Sierra Nevada crest at elevations from 4,000 to 9,000 feet (Holland 1986). It is also found at scattered locations through the Tehachapi Mountains. This sagebrush scrub is dominated by big sagebrush (*Artemisia tridentata*), with a variety of co-dominants, including grasses. In the Project ROW, big sagebrush scrub is found in scattered stands in the vicinity of Stallion Springs (MP 24 to MP 26). This plant community is equivalent to the big sagebrush series (Sawyer and Keeler-Wolf 1995).

Mojave Creosote Bush Scrub

Mojave creosote bush scrub (Mojave Desert Creosote) is dominated by creosote bush (*Larrea tridentata*), which is also a dominant plant in large parts of the Sonoran Desert (Holland 1986). Associated plant species include white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), and box thorn (*Lycium* spp.). This plant community is equivalent to the creosote bush and creosote white bursage types (Sawyer and Keeler-Wolf 1995, CDFG 1999).

A sub-community of the Mojave Desert creosote type was observed at one construction location (MP 116.95) during the field surveys. The California Natural Diversity Data Base (CNDDB, CDFG 2003) refers to this vegetation cover type as Desert Dunes. Holland (1986) divides desert dune communities into Active Desert Dunes, Stabilized and Partially-Stabilized Desert Dunes, and Stabilized and Partially–Stabilized Desert Sand Fields. These types intergrade with each other and also with creosote bush scrub proper, depending on the size of the dunes and the extent to which they are vegetated. Characteristic plants associated with this cover type include big galleta grass (*Pleuraphis rigida*) and desert primrose (*Oenothera deltoidea*). At MP 116.95, small dunes have formed around the bases of shrubs along the bank of the Mojave River.

Desert Saltbush/Sink Scrub

Desert saltbush/sink scrub (Mojave Desert Alkali Sink/Scrub) is found along portions of the existing pipeline. This vegetation includes desert saltbush scrub and desert sink scrub (Holland 1986), and has also been described as alkali sink or chenopod scrub (Munz 1974, CDFG 1999). This community is characterized by one or more species of saltbush (*Atriplex* spp.) in combination with halophytic chenopods such as pickleweed (*Salicornia* spp.), alkali weed (*Cressa truxillensis*), seepweed (sea blite, *Suaeda* spp.), and black greasewood (*Sarcobatus vermiculatus*). This community is found on saline or alkali soils on playas, in sinks, or near seeps where the available groundwater is heavily charged with minerals (Brown 1982). It intergrades with creosote bush scrub and Joshua tree woodland throughout the Mojave Desert.

Joshua Tree Woodland

Joshua tree woodland (Mojave Desert Joshua Tree) is characterized by the arborescent yucca (*Yucca brevifolia*), from which it gets its name (Brown 1982, Holland 1986, Munz 1974). This vegetation community has also been described as Joshua tree tall scrub (CDFG 1999). Big galleta grass, banana yucca (datil, *Yucca baccata*), and jointfir (Mormon tea, *Ephedra* spp.) are a few of the associated plant species in this vegetation community. Joshua tree is not a dominant species anywhere along the ROW, but it is present with saltbush and creosote at some locations. In the Tehachapi Mountains between approximately MP 46 and MP 54.5, the plant community appears to be ecotonal and contains juniper with an understory of annual grasses and mustards. This type of plant community with both Joshua tree and California juniper can be classified as Mohavean juniper woodland and scrub (CDFG 2000).

Sonoran Creosote Bush Scrub

The Sonoran creosote bush scrub (Sonoran Creosote–Bursage) is similar to the Mojave Desert creosote bush scrub and is also dominated by creosote bush, brittlebush, and white bursage. In some parts of the Sonoran Desert, these shrubs may be associated with a substantial percentage of cacti (Holland 1986). Cacti and other succulent species, though, are not well represented in the pipeline ROW or areas surrounding proposed construction locations (EPNG 2003a). The existing Line 1903 pipeline lies within Sonoran creosote bush scrub from approximately MP 262 and MP 303.5. This vegetation has been converted to agriculture from approximately MP 293 and MP 303.5.

The creosote bush-dominated plant community also has been found on sand dunes in the Sonoran Desert in Riverside County, California (MP 259.80 and MP 261.60). The CNDDB (CDFG 2003) refers to this vegetation cover type as Desert Dunes. Holland (1986) divides desert dune communities into Active Desert Dunes, Stabilized and Partially-Stabilized Desert Dunes, and Stabilized and Partially–Stabilized Desert Sand Fields. These types intergrade with each other and also with creosote bush scrub proper, depending on the size of the dunes and the extent to which they are vegetated. Additional plants found on the sand dunes between MP 259.80 and MP 261.60 include devil's lantern (*Oenothera deltoides*) and big galleta grass. These dunes are somewhat larger and more extensive than the small dune formations at MP 116.96.

Previously Disturbed ROW

This category is used to describe the pipeline corridor that was disturbed when the original pipeline was installed in the late 1980s (EPNG 2003a). The Cadiz Lateral corridor is included in this category. This corridor has berms to check erosion, can vary in width, and has a very diverse appearance in terms of current vegetation. In all cases, this community type is used to describe vegetation in the pipeline corridor only when it differs from the surrounding plant structure and composition. In cases where the vegetation in the pipeline corridor is the same as that in the surrounding area, no reference has been made to previously disturbed vegetation.

There are very apparent previously disturbed ROW areas that now have churned or disturbed soils that present surface conditions that differ from those of the adjacent, undisturbed vegetation. In these areas, certain plant species have been able to establish in greater numbers. For example, in the Mojave Desert, saltbush has responded well post-disturbance; however, creosote bush has not returned to the ROW.

Within the oak woodland, no trees have re-established in the cleared ROW, whereas understory grasses and forbs have.

Cultivated Croplands

Cultivated croplands along the pipeline route include irrigated farmland, fallow land, active orchards, and abandoned farmland. These lands often have weedy annual plants such as Russian thistle (*Salsola tragus*). The most extensive sections of the line under cultivation are from approximately MP 0 to MP 4 and from MP 296 to MP 303.5. At the west end of the ROW, near Emidio and Wheeler Ridge, the line crosses the southern end of the San Joaquin Valley. Crops at this end include cotton, pistachios, carrots, potatoes, and grapes. At the east end of the ROW, the pipeline crosses the Palo Verde Valley where crops include alfalfa and cotton. Native plants associated with the croplands in the Blythe (Palo Verde Valley) area include big saltbush (*Atriplex lentiformis*) and arrow weed (*Pluchea sericea*).

The pipeline crosses the Tejon Ranch in the San Joaquin Valley from approximately MP 14 to MP 23. This ranch is managed primarily for livestock production on its 270,000 acres. Elsewhere on the ranch, acreage is under cultivation mainly for grapes and pistachios.

Residential Lands

Residential lands occur near the buried pipeline. In addition to buildings, these areas usually have bare ground, lawns, and/or roads with frequent common and weedy plant species. The Stallion Springs Subdivision, a residential area in a rural setting, is located from approximately MP 24 to MP 26.5. The line also traverses residential areas with livestock (mainly horses) in and near Tehachapi (Cummings Valley), between approximately MP 32 and MP 37. Rural residences mixed with dairy operations are present near the line in Barstow (approximately MP 114 to MP 118).

Willow Scrub

Patches of willow scrub (Holland 1986) are found at the wetland located within the Garlock Fault pipeline alignment (MP 44.59). This area has been classed as a palustrine emergent/palustrine scrub shrub type (EPNG 2003a). This wetland includes areas dominated by herbaceous species, such as sedges (*Carex* spp.) and rushes (*Juncus* spp.), and areas dominated by willows (*Salix* spp.). A small area of open water was present during a March 2003 field survey (EPNG 2003a). Willow scrub and small

cottonwoods (*Populus fremontii*) are also found along one intermittent stream crossed by the ROW on the west side of the Tehachapi Mountains near MP 22.

Desert Dry Wash Woodland

Desert dry wash woodland (Riparian – Desert Wash) is found along the ROW both in the Mojave River floodplain and in some of the numerous washes with intermittent flow crossed by the ROW between the Mojave River and the Colorado River. This vegetation is characterized by open to dense riparian thorn scrub species (Holland 1986).

In the vicinity of Barstow, California (approximately MP 115.5 through MP 126), the pipeline is contained largely within the Mojave River basin or floodplain. Soils are pure sand, forming dunes in some areas, with sparsely scattered vegetation. Plant communities in this area have affinities to a desert wash community containing tamarisk (*Tamarix* spp.), saltbush, and Mormon tea (joint-fir). This vegetation was thus characterized as desert wash, although surveys found no hydrologic features to suggest that the basin is actually functioning as a riparian system. However, the Mojave River does carry water occasionally and is classified as jurisdictional waters of the United States by the USACE (Smith 2003).

Desert washes at construction locations in the easternmost Mojave and Sonoran Deserts were frequently vegetated by smoke tree (*Psorothamnus spinosus*) (EPNG 2003a). Other woody plant present included burrobush (*Hymenoclea salsola*), tamarisk, desert lavender (*Hyptis emoryi*), palo verde (*Cercidium floridum*), and ironwood (*Olneya tesota*).

Tamarisk Scrub

Tamarisk scrub is a weedy monoculture of any of several tamarisk (saltcedar) species that have supplanted native vegetation (Holland 1986). This community is found along washes and streams, and is present along the Line 1903 ROW at the Colorado River near Blythe and Ehrenberg. Native riparian woodland/forest vegetation in this area is characterized by Fremont's cottonwood and Goodding’s willow (*Salix gooddingii*). However, much of this vegetation type has become dominated by invasive tamarisk, especially in the area where the pipeline crosses the Colorado River. There are no construction locations within 0.25 mile of this habitat type.

Wetland and Riparian Areas

Based on the most recent US Geological Survey (USGS) topographical quadrangle maps, National Wetland Inventory (NWI) maps, and information provided as a result of field surveys, one riparian area classified as palustrine emergent/palustrine scrub shrub type (Cowardin 1979) would be disturbed by construction activities (EPNG 2003a) (see Willow Scrub discussion above).

The proposed construction locations would intersect one seasonal wetland (EPNG 2003a). This seasonal wetland is located at MP 147.8 to MP 149.90 (Troy Lake). The USACE generally does not consider seasonal playas "jurisdictional" for protection under the Clean Water Act, and Troy Lake has been determined by the USACE to be non-jurisdictional (Smith 2003).

Riparian vegetation is also present along the Line 1903 ROW at the Colorado River near Blythe and Ehrenberg. Native riparian woodland/forest vegetation in this area is characterized by Fremont's cottonwood, Goodding's willow, and other willow species. However, much of this vegetation type has become dominated by invasive tamarisk, especially in the area where the pipeline crosses the river. There are no construction locations within 0.25 mile of this habitat type (EPNG 2003a).

Aquatic Habitat

The only flowing waters, aquatic areas, riparian areas, or wetlands that provide fish habitat along the Project ROW occur in the Colorado River. In this area, the pipeline was already buried well below ground using directional boring techniques. The pipe returns near the surface on each side of the river, approximately 500 feet or more from the general water's edge. No construction activities are planned in the proximity of the Colorado River.

Special-Status Plant Species

An initial list of potentially affected special-status species was developed based on information obtained from the USFWS (Thomas 2001; Sullivan 2001; USFWS 2002a—c, 2001a—d, and 2000) and the CNNDB (CDFG 2001, 2000). The initial list is contained in Appendix E1. Potential project impacts have been considered for special-status plant species classified as threatened or endangered at the State or Federal

level, or that are included by the California Native Plant Society (CNPS) on its List 1B (plants rare or endangered in California and elsewhere) or List 2 (plants rare or endangered in California but more common elsewhere). Both categories are mandatory for inclusion in environmental documents prepared under the CEQA.

Based on review of literature and field assessments in December 2000 and February 2001, qualified biologists determined that habitat is lacking for some species at the Project's construction locations. The survey schedule for special-status plant species was based on the flowering periods of the species for which general habitat, even if marginal, was present at the Project's construction locations. Surveys were conducted in April, May, and June 2001, and/or in May or June 2002. A list of these species is provided in Table 4.2-1 and is discussed in more detail below. No special-status plant species were found in the pipeline ROW during these surveys, although one species—white-margined beardtongue—was found adjacent to a pipeline ROW segment for which no construction is proposed.

Table 4.2-1. Special-Status Plant Species Potentially Present on Line 1903

Plant Species	Status[1]	Habitat
Bakersfield smallscale *Atriplex tularensis*	FSC, CE, CNPS 1B	Chenopod scrub, alkali meadow; historically in valley sink scrub or with saltgrass; 90-110 meters
Dwarf calycadenia *Calycadenia villosa*	FSC, CNPS 1B	Chaparral, cismontane woodland, valley and foothill grassland, meadows and seeps; open, dry meadows, hillsides, gravelly outwashes; 215-1,275 meters
Crucifixion thorn *Castela emory*	CNPS 2	Mojave Desert scrub, Sonoran Desert scrub, playas; gravelly soils, sometimes in alkali playas or washes; 85-770 meters
Desert cymopterus *Cymopterus deserticola*	BLM, CNPS 1B	Joshua tree woodland, Mojavean Desert scrub; on fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand; 625-910 meters
Barstow woolly sunflower *Eriophyllum mohavense*	BLM, CNPS 1B	Desert chenopod scrub, Mojave Desert scrub, desert playas; mostly in open, silty or sandy areas with saltbush scrub, or creosote bush scrub; barren ridges or margins of playas; 500-900 meters
Tejon poppy *Eschscholzia lemmonii* ssp. *kernensis*	FSC, CNPS 1B	Valley and foothill grassland; 250-750 meters
Striped adobe-lily *Fritillaria striata*	FSC, CT, CNPS 1B	Cismontane woodland, valley and foothill grassland; heavy clay adobe soils in oak grassland; 135-1,455 meters
Coulter's goldfields *Lasthenia glabrata* ssp. *coulter*	BLM, CNPS 1B	Coastal salt marshes, playas, valley and foothill grassland, vernal pools; usually found on alkaline soils in playas, sinks, and grasslands; 1-1,400 meters

Pale-yellow layia *Layia heterotricha*	FSC, BLM, CNPS 1B	Pinyon-juniper woodland, valley and foothill grassland; alkaline or clay soils; open areas; 270-1,365 meters
Comanche Point layia *Layia leucopappa*	FSC, BLM, CNPS 1B	Chenopod scrub, valley and foothill grassland; dry hills in white-grey clay soils, often with weedy grasses; 100-350 meters
Mojave monkeyflower *Mimulus mohavensis*	BLM, CNPS 1B	Joshua tree woodland, Mojavean Desert scrub dry sandy or rocky washes along the Mojave River; 600-1,175 meters
Bakersfield cactus *Opuntia basilaris var. treleasei*	FE, CE, BLM, CNPS 1B	Chenopod scrub, valley and foothill grassland, cismontane woodland; coarse or cobbly well-drained granitic sand on bluffs, low hills, and flats within grassland; 90-550 meters
White-margined beardtongue *Penstemon albomarginatus*	BLM, CNPS 1B	Mojavean Desert scrub, desert dunes; deep stabilized desert sand, in washes and along roadsides; 635-1,065 meters
Parish's phacelia *Phacelia parishii*	BLM, CNPS 1B	Mojavean Desert scrub, playas; alkaline flats and slopes or on clay soils; 535-1,200 meters
Orocopia sage *Salvia greatae*	CNPS 1B	Mojavean Desert scrub, Sonoran Desert scrub; broad alluvial bajadas and fans adjacent to desert washes in gravelly or rocky soil, rocky slopes of canyons; 40-825 meters

[1]BLM = BLM sensitive species.
CE = California listed as endangered.
CNPS = California Native Plant Society.
CT = California listed as threatened.
FE = Federally listed as endangered.
FSC = Federal species of concern.
CNPS1B = California Native Plant Society List 1B—plants rare or endangered in California and elsewhere.
CNPS 2 = California Native Plant Society List 2—plants rare or endangered in California but more common elsewhere.

Rare Plant Species

Rare plant habitat along the ROW is associated with two regions: (1) the Mojave/Sonoran Desert scrub (approximately MP 50 to MP 303.5), and (2) the San Joaquin Valley-Tehachapi Mountains (approximately MP 0 to MP 50). Appendix E2 includes descriptions of plant species for which suitable habitat is found along the ROW and the results of floristic plant surveys.

In the Mojave and Sonoran Desert region, suitable habitat was identified along the pipeline ROW for the Barstow woolly sunflower, desert cymopterus, Mojave monkey flower, white-margined beardstongue, and Parish's phacelia. During floristic plant surveys conducted at proposed construction sites, only one of these species, white-margined beardstongue was found. However, it is possible that Barstow woolly

sunflower, an annual species, might establish in the vicinity of the Twelve Gauge Lake Heat Station.

The San Joaquin Valley-Tehachapi Mountains are predominantly characterized by the valley grassland plant community, with non-native annual grasses and wild mustards. In the valley grassland plant community, suitable habitat was identified along the pipeline ROW for dwarf calycadenia, hispid bird's beak, Tejon poppy, Coulter's goldfields, pale yellow layia, Comanche Point layia, and Bakersfield cactus. Habitat for the State-listed striped adobe lily was identified along the pipeline ROW, but no construction locations are proposed within the habitat area. None of these species were found during floristic plant surveys conducted at construction sites for the proposed Project.

Federally Listed Plant Species

Bakersfield Cactus

Bakersfield cactus is federally and State-listed as endangered, a BLM sensitive species, and a CNPS List 1B species (CDFG 2003b). This cactus is endemic to Kern County and is known from the east side of the Bakersfield area. CNDDB information indicates that an occurrence of this subspecies is recorded approximately 1 mile from the Emidio Pump Station at (MP 0.00). Field surveys were conducted for this species at construction locations between approximately MP 0 and MP 50, no plants of this species were found.

State-Listed Plant Species

Bakersfield Smallscale

Bakersfield smallscale is State listed as endangered, a Federal species of concern, and a CNPS List 1B species (CDFG 2003b). Habitat for this annual herb is located at approximately MP 17.0 in a single, small alkaline swale with saltgrass (*Distichlis spicata*). This is not a construction location. Although Atriplex species were present, Bakersfield smallscale is not found at this site during surveys. It is possible, but unlikely, that Bakersfield smallscale habitat occurs elsewhere on the ROW between approximately MP 0 and MP 22.5.

Striped Adobe Lily

Striped adobe lily is State listed as threatened, a Federal species of concern, and a CNPS List 1B species (CDFG 2003b). Heavy clay habitat for this perennial species is present on a steep slope dividing the San Joaquin Valley and the Tehachapi Mountains between approximately MP 22.5 and MP 24. CNDDB records indicate known occurrences of the adobe lily on adjacent slopes in the area. This is also the area where the Tejon Ranch abuts the Stallion Springs Subdivision. No construction activities are proposed within this habitat.

Federal Plant Species of Concern

Dwarf Calycadenia

Dwarf calycadenia is a Federal species of concern and a CNPS List 1B species (CDFG 2003b). This annual herb is found in valley and foothill grassland, chaparral, cismontane woodland, and meadows. Known occurrences of dwarf calycadenia are on or adjacent to the pipeline route between approximately MP 32.5 through MP 34.5. Construction locations between approximately MP 14 and MP 40 were surveyed for this species, but no plants of this species were found.

Tejon Poppy

Tejon poppy is a Federal species of concern and a CNPS List 1B species (CDFG 2003b). This annual species occurs in valley and foothill grassland in Kern County. Literature records indicate that plants are known between Chanac and Tejon Canyons (USFWS 1998). CNDDB records (CDFG 2000) indicate that plants are known on or adjacent to the pipeline corridor between approximately MP 13 and MP 17.4. Although field crews identified potential habitat for this species between approximately MP 14 and MP 40, no plants of this species were found during floristic surveys for the Project.

Pale Yellow Layia

Pale yellow layia is a Federal species of concern and a CNPS List 1B species (CDFG 2003b). This annual herb is found in the valley and foothill grasslands. The nearest record obtained through CNDDB is over 5 miles from the pipeline ROW. Although field crews identified potential habitat from approximately MP 14 through MP 50, no plants of this species were found during floristic surveys.

Comanche Point Layia

Comanche Point layia is a Federal species of concern and a CNPS List 1B species (CDFG 2003b). This annual herb occurs in valley and foothill grasslands. It is known only from the southern San Joaquin Valley and adjacent hills to the east (USFWS 1998). Plants have been reported on or adjacent to the pipeline corridor at approximately MP 13.2 through MP 15.3. Field crews identified potential habitat between approximately MP 14 and MP 40. Although this species was found along the ROW when the All American Pipeline was constructed, no plants of this species were found during floristic surveys for the Project. Based on this species' annual habit, there is potential for its re-colonization of the ROW between approximately MP 13 and MP 16. No construction locations are proposed in this area.

Other Special-Status Plant Species

Angel Trumpets

Angel trumpets is a CNPS List 2 species (CDFG 2003b). This perennial herb is found in Sonoran Desert scrub habitats, generally on limestone. The species was not observed in proposed construction areas.

Crucifixion Thorn

Crucifixion thorn is a common name for several green-stemmed thorny desert plants. In this report, the name represents the species *Castela emoryi*, a CNPS List 2 species (CDFG 2003b). Crucifixion thorn occurs in Riverside County in desertscrub, washes, and playas. It is a perennial plant that can be identified at any time of year. Although potential habitat occurs between approximately MP 258 and MP 293, no plants of this species were found during floristic surveys for the Project.

Desert Cymopterus

Desert cymopterus is a CNPS List 1B species (CDFG 2003b). This perennial herb occurs in Mojave Desert scrub habitats located between approximately MP 50 and MP 132. It is known to occur on or adjacent to the pipeline at approximately MP 74.2 through MP 75.6. Although field survey crews identified potential habitat from approximately MP 45 through MP 132, no plants of this species were found during floristic surveys for the Project. This is most likely due to the previously disturbed nature of the ROW, which suggests that the potential for its occurrence along the existing pipeline is low. This is a perennial species with relatively little propensity for colonizing disturbed sites. It does occur near the disturbed ROW in undisturbed areas.

Barstow Woolly Sunflower

Barstow woolly sunflower is a CNPS List 1B species (CDFG 2003b). This annual herb occurs in Mojave Desert scrub communities. It is known to occur at or in the vicinity of approximately MP 102.7, MP 105.4, and MP 108.8—which places it in the area of the Twelve Gauge Lake Heat Station. Similar habitat occurs between approximately MP 50 and MP 258. Barstow woolly sunflower was located along the ROW near Daggett (approximately MP 132) when the All American Pipeline was constructed in 1985. (CSLC and BLM 1984.)

Surveys at construction locations were conducted within the species range in April 2001 and/or May 2002, and no plants were located. Construction locations within 1 mile of known locations of this species or in areas where the original All American Pipeline construction affected this species were all re-surveyed in May 2002. Based on the negative results, the potential for this species to occur in the ROW appears to be low, but it may occur in immediately adjacent undisturbed areas.

Coulter's Goldfields

Coulter's goldfields is a CNPS List 1B species (CDFG 2003b). This annual herb is found in vernal pools in valley and foothill grasslands. An occurrence is located approximately 0.5 mile from the pipeline corridor at approximately MP 37 through MP 38. Although field crews identified potential habitat from approximately MP 14 through MP 40, no plants of this species were found during floristic surveys for the Project.

Mojave Monkey Flower

Mojave monkey flower is a CNPS List 1B species (CDFG 2003b). This annual herb is endemic to San Bernardino County and occurs in the Mojave Desert near Barstow. Specific locations are known along the Mojave River within 1 mile of the pipeline near approximately MP 132. Habitat was identified by field crews between approximately MP 117 and MP 258 where desert washes occur. This species is an annual and is therefore expected to be visible only during its short growing season or in years of high rainfall. Its habitat is defined as dry sandy or rocky washes. In San Bernardino County, dry washes are located within construction locations at 11 sites. No plants of this species were found during floristic surveys for the Project.

Parish's Phacelia

Parish's phacelia is a CNPS List 1B species (CDFG 2003b). This annual herb occurs in San Bernardino County within the Mojave Desert ecosystem. There are no specific locations of this species in proximity to the pipeline ROW (CDFG 2001). Although playa habitat is present along the ROW at Troy Lake (approximately MP 147.8 to 149.9), no plants of this species were found during floristic surveys for the Project.

White-Margined Beardstongue

White-margined beardstongue is a CNPS List 1B species (CDFG 2003b). This perennial herb occurs in San Bernardino County in Mojave Desert scrub habitats with a significant sand component. The species may occur in sand dunes, desert washes, and potentially in sandy roadsides. Potential habitat was identified by field crews between approximately MP 50 and MP 258. Plants were located adjacent to the pipeline ROW at approximately MP 163.9, but no plants of this species were found at proposed construction sites (EPNG 2003a).

Orocopia Sage

The Orocopia sage is a CNPS List 1B species (CDFG 2003b). This perennial shrub is found only from San Bernardino County. It occurs in desert scrub habitats, including desert washes and canyons. Potential habitat was identified between approximately MP 50 and MP 293. The orocopia sage is identifiable at anytime of year and was not observed at any of the proposed construction sites.

Invasive and Non-Native Plant Species

Field surveys at construction locations conducted between December 2000 and March 2003 found 10 species that are listed as undesirable by an agricultural agency: Russian thistle (*Salsola iberica*), tamarisk (*Tamarix* sp.), yellow star thistle (*Centaurea solstitialis*), giant reed (*Arundo donax*), filaree (*Erodium cicutarium*), cheatgrass (*Bromus tectorum*), wild mustard (*Brassica* sp.), puncture vine (*Tribulus terrestris*), Mediterranean grass (*Schismus barbata*), and white-top or hoary cress (*Cardaria draba*). The tamarisk and yellow-star thistle are listed as Exotic Invasive Plants of Greatest Ecological Concern as of 1996, by the California Exotic Pest Plant Council. The status and occurrence of these species within construction locations is displayed in Table 4.2-2.

Table 4.2-2. Noxious Weeds Present in the Vicinity of the Project

Common Name Scientific Name	Source of Listing[1]	Occurrence by Mileposts	CDFA Rating[2]	Cal-IPC Rating[3]
Giant reed *Arundo donax*	MDRCD, NRCS	117.95	B	List A-1
Mustards *Brassica* spp.	NRCS	17.56, 22.48, 24.70, 26.00, 29.50, 31.00, 33.05, 40.20, 43.10, 44.00, 45.45, 50.46, 56.07, 82.70		List A-2. List B[4]
Annual brome *Bromus tectorum,* *B. madritensis* ssp. *Rubens*	NRCS	17.56, 22.48, 24.70, 26.00, 26.10, 29.50, 31.00, 31.70, 33.05, 40.20, 43.10, 44.00, 45.45, 62.58, 63.06, 105.80, 169.39		List A-1. List A-2[4]
White-top *Cardaria* sp.	CDFA, KMWMA, SBDC	29.50		List A-2 or List B[4]
Yellow star-thistle *Centaurea solstitialis*	CDFA, Kern Mtn. MDRCD, SBDC	31.70, 33.05	C	List A-1
Storksbill *Erodium cicutarium*	NRCS	17.56, 22.48, 26.00, 31.00, 31.70, 33.05, 40.20, 43.10, 44.00, 45.45, 47.73, 56.07, 63.06, 65.60, 82.70, 94.50, 98.70, 109.80, 126.00, 126.70		Not listed
Russian thistle *Salsola tragus*	CDFA, KMWMA, MDRCD	0.00, 56.07, 62.58, 82.70, 105.80, 116.95, 121.20, 126.00	C	NMI
Mediterranean grass *Schismus barbatus*	NRCS	82.70, 116.95, 126.00, 126.70, 262.70		AG
Tamarisk (saltcedar) *Tamarix* spp.	KMWMA, MDRCD, NRCS	116.95, 247.60		List A-1, NMI[4]

Status Codes:

[1]CDFA = California Department of Food and Agriculture Division of Plant Health and Pest Prevention Services (http://pi.cdfa.ca.gov/weedinfo/sortbyrating2.htm).

KMWMA = Kern Mountain-Desert Weed Management Area.

MDRCD = Mojave Desert Resource Conservation District.

SBDC = San Bernardino County (California Department of Weights and Measures).

NRCS = USDA Natural Resources Conservation Service, Blythe California (R. Bickel).B = Eradication, containment, control or other holding action at the discretion of the commissioner.

C = State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the commissioner; reject only when found in a cropseed for planting or at the discretion of the commissioner.

[3]Cal-IPC = California Invasive Plant Council (1999).

List A-1 = Widespread pests that are invasive in more than three Jepson regions.

List A-2 = Regional pests that are invasive in three or fewer Jepson regions.

List B = Wildland pest plants of lesser invasiveness; invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption; may be widespread or regional.
Red Alert = Pest plants with potential to spread explosively; infestations currently small or localized.
NMI = Need more Information—plants for which current information does not adequately describe the nature of their threat to wildlands, distribution or invasiveness.
AG = Annual grasses—a preliminary list of annual grasses, abundant and widespread in California, that pose significant threats to wildlands.

[4] Varies by species.

Wildlife

The predominant habitat types occurring along the Line 1903 route are previously disturbed ROW areas, non-native annual grassland, Mojave creosote bush scrub, desert saltbush/sink scrub, Joshua tree woodland, Sonoran creosote bush scrub, sand dunes, desert washes, cultivated croplands, and residential lands. No coniferous forest areas would be crossed by the construction locations. Although the pipeline route passes through oak woodland and riparian woodland habitat types, the ROW is disturbed in these areas, and construction would not affect these habitats. These habitat/vegetation types, as well as a few infrequent types, are discussed in more detail in the Vegetation/Habitat Types section above.

Several of the construction locations between Twelve Gauge Lake Heat Station (MP 105.80) and approximately MP 250 are located within playas or alkali sinks. A total of eight construction locations (total of 3.08 acres) fall within the desert saltbush/sink scrub habitat type. These are typically unvegetated or have scattered saltbush and sea-blight plants. Sand dunes are present at three construction locations (approximately MP 116.95, MP 259.80, and MP 261.60) within the Sonoran Desert.

Wildlife species that inhabit the construction locations and surrounding areas are typical of the non-native annual grassland, residential areas, agricultural lands, and various desert scrub habitats of southern California.

Wildlife that was observed on the Mojave and Sonoran Deserts during December 2000 and February 2001 surveys included black-tailed jackrabbits, round-tailed ground squirrels, and desert cottontails. Numerous small mammal burrows were seen, presumably used by small mammals (e.g., kangaroo rats) and reptiles (e.g., Mojave rattlesnake). In the Tehachapi Mountains (approximately MP 22.5 to MP 50), numerous red-tail hawks were reported, as well as acorn woodpeckers, scrub jays, and western bluebirds in the oak woodland/savannah areas. In the residential areas, species observed included house finches, juncos, horned larks, and lesser goldfinches.

The Tejon Ranch area (approximately MP 17 to MP 23) is especially rich in wildlife species. According to Pruett (2000), the ranch is named for its numerous badgers. It also supports populations of wild turkeys, feral pigs, and mountain lions. In addition to the western fence snake, various species of rattlesnake are known from this area.

The land is generally dry, and very few perennial or intermittent drainages bisect the region. Some of these drainages support limited wetland and riparian vegetation that provides valuable habitat for a number of local vertebrate and invertebrate species. More desert washes were observed in the Sonoran Desert compared to the Mojave Desert. A small riparian wetland would be disturbed at the Garlock Fault realignment at MP 44.59 during construction. However, the current realignment/route at Garlock Fault was chosen in order to minimize impacts on the existing willow trees/shrubs within the wetland.

The Line 1903 ROW crosses the Colorado River near Blythe, California and Ehrenberg, Arizona (approximately MP 302). Proposed construction locations are sited no closer than 0.4 mile from the edge of the riparian area associated with the Colorado River.

Game Species

Big game species occurring along the line include mule deer and elk in the Tehachapi to San Joaquin Valley area. California bighorn sheep inhabit mountainous areas in the Tehachapi's to the north of Highway 58, near but not on or adjacent to the pipeline (BLM 1980, CDFG 1980). Nelson's bighorn sheep occur in the desert mountains surrounding many of the construction locations in the eastern Mojave Desert (CDFG 2001). These areas include the Bristol, Cady, Ship, Old Woman, Big Maria, and Marble Mountains. There is no bighorn sheep habitat along the pipeline ROW itself. Mule deer frequent the Lower Colorado River Valley and are known to use the agricultural areas around Blythe as well as surrounding desert habitats.

Upland game birds associated with rangeland and agricultural land that occur along the proposed route include California quail, Gambel's quail, wild turkey, and mourning dove. Coveys of quail were observed during December 2000 surveys in the Tehachapi Mountains (approximately MP 22.5 to MP 50) and on Tejon Ranch (approximately MP 17 to MP 23).

Non-Game Species

Non-game species potentially occurring in the Project area encompass a large variety of animal taxa. Important non-game species primarily include a number of raptors, mammals, songbirds, reptiles, and amphibians.

Raptor species that occupy habitats along the route are those primarily associated with various desert scrub habitats, grassland, and cultivated cropland. Many raptors are protected species and are further discussed in the discussion of threatened and endangered species. The Tehachapi Mountains are an important area for raptors, especially golden eagles (BLM 1980). Field biologists observed numerous red-tail hawks, golden eagles, and kestrels while performing surveys there (approximately MP 22.5 to MP 50) (EPNG 2003a). Signs of burrowing owls were observed in association with California ground squirrel burrows in the Tejon Ranch area (approximately MP 17 to 23), and burrowing owls were observed in the vicinity of the ROW near approximately MP 298 (EPNG 2003a).

Prairie falcons are known to nest in the desert mountains surrounding the pipeline ROW in the eastern Mojave Desert (CDFG 2001).

During habitat surveys conducted for the Project in December 2000, incidental observations of existing raptor nests occurring within 0.5 mile of the pipeline route, access roads, additional temporary workspace, and contractor/pipe yards were documented, when apparent. Only one raptor nest, presumed to be that of a red-tail hawk, was found adjacent to the existing pipeline (EPNG 2003a). This nest was on a transmission line structure in the Stallion Springs Subdivision (approximately MP 25.5).

Small mammals that might use habitats crossed by the Project include the California ground squirrel, Mohave ground squirrel, and San Joaquin kit fox. The California ground squirrel is common along the line from the agricultural areas near Emidio (approximately MP 17) to Tehachapi (approximately MP 40). The Mohave ground squirrel is known from many locations on and near the pipeline between approximately MP 50 and MP 132. Field crews saw small mammal burrows at all but two construction locations, but the identity of the burrowers was not determined (EPNG 2003a). Burrows at one construction location were large enough for a San Joaquin kit fox. Again, the identity of the species occupying this burrow was not determined (EPNG 2003a). Both the Mohave ground squirrel and San Joaquin kit fox are discussed in more detail under Special-Status Wildlife Species.

Skunk (spotted and striped), raccoon, and badger also may occur in one or more of the habitats crossed by the proposed Project. Many of these species are active at night to avoid the daytime temperatures and thus were not observed by field crews. However, field crews did note a species' indicated presence by signs other than direct observation (e.g., scat, tracks, and burrows) when such signs were present (EPNG 2003a).

Lava fields and hills are adjacent to the pipeline ROW between approximately MP 151 and MP 230. Bats may find refuge in the lava beds or in nearby abandoned mines in the mountains (CDFG 2001, Egan 2001).

Relatively few species of songbirds, or passerines, occur in desert scrub and desert grassland habitats, as compared to woodland or riparian communities. Avian species observed during field surveys included American crow, common raven, and horned lark (EPNG 2003a).

Playas, or seasonal wetlands, occur along or adjacent to the pipeline. When flooded, Bristol Lake (not crossed by the pipeline but in the immediate vicinity of MP 197.5) and Danby Lake (not crossed by the pipeline but in the immediate vicinity of MP 247.6) are known to be used, at least incidentally, by western snowy plovers (Nicol 2001, Egan 2001, Yomiko 2001). According to local biologists with BLM and CDFG, these lakes are not usually deep enough to support waterfowl or larger wading birds. Avian species that are protected federally or by the State are discussed in more detail under Special-Status Wildlife Species.

Amphibians and reptiles occupying the region are typically limited by their specific habitat requirements. Because all but one of the construction locations are located outside moist or wet habitats, the amphibian and reptile species that might occur in the Project area are those that are adapted to arid conditions.

Few reptile species were observed during field surveys (EPNG 2003a). However, the protected desert tortoise was observed during field surveys (EPNG 2003a). The desert tortoise and other protected reptilian species are discussed in more detail under Special-Status Wildlife Species.

Due to the extremely arid conditions in the areas surveyed, field crews observed no amphibian species (EPNG 2003a). Several species of lungless salamanders are known

from the woodland and higher elevations in the Tehachapi Mountains. These species are discussed in more detail under Special-Status Wildlife Species.

Special-Status Wildlife Species

Prior to conducting field studies, a preliminary list of special-status species with potential to occur in the Project area was compiled from the USFWS lists; the USFWS web site; and CNDDB information for Kern, San Bernardino, and Riverside Counties in California (EPNG 2003a). For each species on the preliminary list, the known and predicted ranges (by state and county) were compared with the counties traversed by the Project. These comparisons, together with the field survey data, indicate that 27 of the species do not have the potential to occur in the Project ROW or other Project sites.

Special-status wildlife species that may be present (see Table 4.2-3) include: one invertebrate species, two fish species, one amphibian species, seven species of reptile, and 33 bird species. In addition to special-status bats, nine other special-status mammals may occur in the Project area. Table 4.2-3 lists these species and their Federal and State status and habitat.

Table 4.2-3. Special-Status Wildlife Species Potentially Present on Line 1903

Common Name	Status[1]	Habitat[2]
Invertebrates		
San Emigdio blue butterfly *Plebulina emigdionis*	FSC	Shadscale scrub in desert canyons and near washes
Fish		
Bonytail chub *Gila elegans*	FE, CE	Warm, swift, turbid rivers
Razorback sucker *Xyrauchen texanu*s	FE, CE	Aquatic habitats
Amphibians		
Yellow-blotched salamander *Ensatina eschscholtzii croceator*	FSC, CSC, BLMS	Forests and well-shaded canyons, oak woodlands and old chaparral; under logs, rocks and boards; uses old rodent burrows
Reptiles		
Silvery legless lizard *Anniella pulchra pulchra*	FSC, CSC	Coastal dunes, valley foothill, chaparral, and coastal scrub habitats
Blunt-nosed leopard lizard *Gambelia sila*	FE, CE, FP	Sparsely vegetated alkali and desert scrub habitats; seeks cover in mammal burrows
Rosy boa *Lichanura trivirgata*	FSC	Desert and chaparral; washes
San Joaquin whipsnake (coachwhip) *Masticophis flagellum ruddock*i	FSC, CSC	Open terrain in grass, desert, scrub, chaparral, and pasture habitats
California horned lizard *Phrynosoma coronatum frontale*	FSC, CSC, BLMS	Valley-foothill hardwood, conifer and riparian, and annual grass habitats, vineyards
Mojave fringe-toed lizard *Uma scoparia*	CSC, BLMS	Fine, loose, wind-blown sand deposits in sand dunes, dry lakebeds, desert washes, desert scrub
Desert tortoise *Xerobates (Gopherus) agassizii*	FT, CT	Desert scrub, desert wash, Joshua tree woodlands, creosote bush habitats; friable soils; alluvial fans, washes, canyon bottoms, rocky hillsides
Birds		
Golden eagle *Aquila chrysaetos*	CSC, FP	Rolling foothills mountain areas, sage-juniper flats, desert
Short-eared owl *Asio flammeus*	FSC	Open areas, grasslands, irrigated lands, marshes
Burrowing owl *Athene cunicularia hypugaea*	FSC, CSC, BLMS	Open, dry grasslands, scrubland, and deserts; uses rodent or other burrows for roosting and nesting
American bittern *Botaurus lentiginosus*	FSC	Wetlands and wet meadows greater than 7 acres with adjacent idle grasslands
Aleutian Canada goose *Branta canadensis leucopareia*	FD	Winter feeding areas include agricultural lands; nighttime roosting areas include inland lakes and coastal islands
Ferruginous hawk *Buteo regalis*	FSC, CSC	Open grasslands, agricultural areas, desert scrub; uses lone tree or utility poles for perch
Swainson's hawk *Buteo swainsoni*	FSC , CT	Plains, range, open hills; riparian systems; periphery, lone trees (41 to-82 feet high or groves in agricultural fields)
Costa's hummingbird *Calypte costae*	FSC	Summers and may breed in Mojave Desert
Mountain plover	FSC (FD), CSC	Open, shortgrass prairie and plowed or burned

Charadrius montanus		croplands
Northern harrier *Circus cyaneus*	CSC	Coastal salt and freshwater marshes; grasslands, from salt grass in desert sink to mountain meadows
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FSC, CE	Riparian forest; broad, lower flood bottoms of larger river systems; willows, cottonwoods
Sonoran yellow warbler *Dendroica petechia sonorana*	CSC	Riparian, deciduous habitat; cottonwood and willow
Snowy egret *Egretta thula*	FSC	Marshes, swamps, ponds, shores, tideflats; agricultural areas
Southwestern willow flycatcher *Empidonax traillii extimus*	FE	Wet meadow and montane riparian habitats with dense willows/cottonwood/tamarisk
Prairie falcon *Falco mexicanus*	FSC, CSC	Dry, open terrain, either level or hilly; nests on cliffs
California condor *Gymnogyps californianus*	FE, CE, FP	Permanent resident of semi-arid, rugged mountains including the Tehachapi Mountains; forages over wide areas of open rangelands;
Bald eagle *Haliaeetus leucocephalus*	FT, CE, FP	Local winter migrant in Southern California; frequents large reservoirs and rivers; large trees or cliffs near water with abundant prey
Yellow breasted chat *Icteria virens*	CSC	Riparian thickets, willows, dense vegetation along streams
Western least bittern *Ixobrychus exilis hesperis*	FSC	Occurs in emergent freshwater wetlands and marshes
Loggerhead shrike *Lanius ludovicianus*	FSC, CSC	Lowlands and foothills; open shrubland with suitable perches; valley-foothill hardwood or riparian, desert riparian, and Joshua tree habitats
Lewis' woodpecker *Melanerpes lewis*	FSC	Oak woodlands
Gila woodpecker *Melenerpes uropygialis*	CE	Cottonwoods, other desert riparian trees, date palms
Elf owl *Microthene whitneyi*	CE	Cottonwood willow mesquite riparian zones and along the Colorado River; nests in woodpecker holes
Long-billed curlew *Numenius americanus*	FSC, CSC	Wet meadow habitat; coastal estuaries, open grasslands, and croplands (non-nesting)
California brown pelican *Pelecanus occidentalis californicus*	FE, CE, FP	Coastal land and islands, open water
Hepatic tanager *Piranga flava*	FSC, CSC	White fir-pinyon areas on desert peaks; no effect due to species range and lack of habitat
Summer tanager *Piranga rubra*	CSC	Desert riparian habitat; cottonwood-willow stands
White-faced ibis *Plegadis chihi*	FSC, CSC	Fresh emergent wetland, shallow lacustrine waters and muddy ground of wet meadows and irrigated or flooded pastures and croplands
Vermilion flycatcher *Pyrocephalus rubinus*	CSC	Desert riparian adjacent to irrigation fields, pastures, open mesic areas
Yuma clapper rail *Rallus longirostris yumanensis*	FE, CT, FP	Occurs in coastal wetlands, brackish and freshwater marshes
Brewer's sparrow *Spizella breweri*	FSC	Winters in open desert scrub and similar habitat, plains and fields
Bendire's thrasher *Toxostoma bendirei*	FSC	Flat areas of desert succulent scrub and Joshua tree habitats
Crissal thrasher	CSC	Desert riparian and desert wash habitats; dense

Toxostoma crissale		vegetation along streams
Le Conte's thrasher T*oxostoma lecontei macmillanorum*	FSC, CSC	Open desert wash, desert scrub, alkali desert scrub, desert succulent scrub; nests in dense spiny shrub or densely branched cactus in desert wash habitat
Mammals		
Pallid bat *Antrozous pallidus*	CSC, BLMS	Deserts, grasslands, shrublands, woodlands and forests; rocky outcrop areas for roosting
Pale Townsend's big-eared bat *Corynorhinus (Plecotus) townsendii pallescens*	FSC	Caves, abandoned mines in the desert; forage on moths and insects
Pacific western big-eared bat *Corynorhinus (Plecotus) townsendii townsendi*	FSC	Caves, abandoned mines in the desert; forage on moths and insects
Short-nosed kangaroo rat *Dipodomys nitratoides brevinasus*	FSC	Arid grasslands, saltbush, desert scrub
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	FE, CE	Grasslands, scattered shrub, desert scrub
Spotted bat *Euderma maculatum*	FSC, CSC, BLMS	Foothills, mountains and desert regions; arid deserts and grasslands through mixed conifer forests; prefers cliffs in area for roosting
Greater western mastiff bat *Eumops perotis californicus*	FSC, CSC, BLMS	Open, arid, semi-arid habitats; conifer and deciduous woodlands, coastal scrub, annual grasslands, desert scrub, urban habitats; roosts in trees, cliffs, buildings, and tunnels
California leaf-nosed bat *Macrotus californicus*	CSC, BLMS	Desert riparian, desert wash, desert scrub, alkali scrub, palm oasis; needs rocky rugged terrain with mines or caves
Small-footed myotis *Myotis ciliolabrum*	FSC, BLMS	Uses relatively arid wooded and brushy uplands and deserts near water
Long-eared myotis *Myotis evotis*	FSC, BLMS	Brush, woodland, and forest habitats from sea level to 2,700 meters
Fringed myotis *Myotis thysanodes*	FSC, BLMS	Pinyon-juniper woodland, valley–foothill hardwood, and hardwood conifer habitats
Long-legged myotis *Myotis volans*	FSC	Mountain ranges over 1,200 meters; woodland, forest, chaparral scrub
Southern grasshopper mouse *Onychomys torridus ramona*	FSC, CSC	Alkali desert scrub, coastal scrub, mixed chaparral, and sagebrush habitats
Tulare grasshopper mouse *Onychomys torridus tularensis*	FSC, CSC, BLMS	Arid shrublands, grasslands, oak woodlands, and alkali sinks
Tehachapi pocket mouse *Perognatus alticolus inexpectatus*	FSC, CSC	Arid grasslands and desert shrub; elevation 1,050 to 1,800 meters
San Joaquin pocket mouse *Perognathus inornatus inornatus*	FSC, CSC, BLMS	Grasslands and blue oak savannahs; friable soils, chenopod scrub, sea level to 1,500 meters
Colorado River cotton rat *Sigmodon arizonae plenus*	CSC	Riparian habitats; alluvial bottoms with sedges, rushes
Mohave ground squirrel *Spermophilus mohavensis*	FSC, CT	Open desert scrub, alkali scrub, and Joshua tree woodland; sandy to gravelly soils; avoids rocky areas burrows at base of shrubs
San Joaquin kit fox *Vulpes macrotis mutica*	FE, CT	Annual grasslands, grassy open areas with scattered shrubs; loose-textured sandy soils for burrowing; also saltbush scrub, alkali sink, agricultural, and developed areas

Status Codes:
[1]FE = Federally listed as endangered.
FT = Federally listed as threatened.
FD = Federally de-listed but monitored.
FSC = Federal species of concern.
CE = State listed as endangered.
CT = State listed as threatened.
CSC = State species of concern.
FP = Federal fully protected species.
BLMS = BLM sensitive species (this information may be incomplete because a comprehensive BLM sensitive species list was not available).

[2]Habitat information was compiled from the California Natural Diversity Data Base (CDFG 2000, 2003).

Potential habitat for threatened, endangered, and special-status (TES) wildlife species along the pipeline is divided into three primary areas: (1) the Tehachapi Mountains and San Joaquin Valley, (2) the Mojave and Sonoran Deserts, and (3) the Lower Colorado River Valley.

Special-status species that characterize the annual grasslands of the San Joaquin Valley include the San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, and burrowing owl. Within the Tehachapi Mountains, the pipeline rises in elevation above the valley floor. California condors are not uncommon foraging over wide areas along the ridges there. Although the pipeline traverses some oak woodland, it is more accurately “savannah” with scattered trees. The understory is that of non-native annual grassland, characteristic of the San Joaquin Valley to the west. The oak woodland/savannah found in the Tehachapi Mountains provides organic debris and is generally rocky and hilly. These factors provide habitat with marginal potential to support salamanders, such as the yellow-blotched salamander, along the pipeline corridor.

The range of the desert tortoise includes much of the Mojave and Sonoran Desert environment. Another TES species associated with the desert tortoise is the Mohave ground squirrel. Other special-status wildlife species associated with the desert scrub habitat include pallid bat, California leaf-nosed bat, prairie falcon, LeConte’s thrasher, and Mojave fringe-toed lizard.

Riparian habitat occurs along the Colorado River. However, no construction locations are within this habitat type (EPNG 2003a). The proximity of the Colorado River to agricultural areas provides excellent wildlife habitat for numerous species. Wildlife species of concern known to occur within the riparian and agricultural areas associated with the Colorado River Valley include: Yuma clapper rail, Southwestern willow

flycatcher, bald eagle, brown pelican, mountain plover, burrowing owl, western yellow-billed cuckoo, Sonoran yellow warbler, yellow breasted chat, Gila woodpecker, elf owl, summer tanager, vermilion flycatcher, Crissal thrasher, and Colorado River Cotton rat.

Invertebrate Species

Four federally listed invertebrate species and one Federal species of concern are known to occur in the counties through which the existing Line 1903 pipeline crosses. The Project was determined to be outside the known or expected range or habitat for the four listed species, including the longhorn fairy shrimp, vernal pool fairy shrimp, valley elderberry longhorn beetle, and Kern primrose sphinx moth.

San Emigdio Blue Butterfly

The San Emigdio blue butterfly is a Federal species of concern and is known to occur in shadscale scrub in desert canyons and washes in the San Joaquin Valley. Although none of the construction locations in that area are within desert canyons or washes, these features are present at approximately MP 22.48 at the Tejon Pump Station (EPNG 2003a).

Fish Species

Seven federally listed fish species are known to occur in the counties through which the existing Line 1903 pipeline crosses. The Project was determined to be outside the known or expected range or habitat for five of these species, including the desert pupfish, Delta smelt, Gila topminnow, Mohave tui chub, and Sacramento splittail. Habitat in the vicinity of the Project for the other two species (bonytail chub and razorback sucker) is the Colorado River. No other special-status fish are expected to occur in the Project vicinity.

Bonytail Chub

The bonytail chub is federally and State listed as endangered. This species is the rarest native fish in the Colorado River (Maddux et al. 1993). The bonytail chub is adapted to mainstream rivers, where it has been observed using pools and eddies. The last natural population is found in Lake Mojave. Critical habitat for this species is located upriver from the Line 1903 crossing and therefore is not present in the Project area (Maddux et al. 1993).

Razorback Sucker

The razorback sucker is federally and State listed as endangered. This species is part of the unique fish fauna endemic to the Colorado River Basin (Maddux et al. 1993). Historically, the razorback sucker was found in a wide variety of riverine habitats, including backwaters, sloughs, side channels, and oxbow lakes. This species has been negatively affected by habitat alterations resulting primarily from damming and channelizing its river habitat. CNDDB records indicate a known occurrence approximately 0.5 mile upstream from MP 303. The area of the pipeline river crossing is within Critical Habitat designated for the species between Parker Dam and Imperial Dam (Maddux et al. 1993). No construction is planned at or near the Colorado River.

Reptiles, Birds, and Mammals

Federally Listed Species

Wildlife species potentially present in the Project area that are federally listed as endangered include the blunt-nosed leopard lizard, California condor, San Joaquin kit fox, Tipton kangaroo rat, southwestern willow flycatcher, and Yuma clapper rail.

The desert tortoise and bald eagle are the only wildlife species potentially occurring in the Project area that are federally listed as threatened. The Aleutian Canada goose was included in the initial list of threatened species; however, this species was de-listed on March 20, 2001 (USFWS 2001). De-listed species must be monitored for 5 years following de-listing; therefore, the Aleutian Canada goose is discussed with the Federal species of concern.

Blunt-Nosed Leopard Lizard

The blunt-nosed leopard lizard is federally and State listed as endangered. This species historically ranged from the Sacramento-San Joaquin Delta to the Tehachapi Mountains and Sierra foothills (Nicolai 1992). The blunt-nosed leopard lizard occurs in valley and foothill grasslands, saltbush scrub, alkali flats, large washes, and canyon floors (CDFG 1980). Although there are no CNDDB records for the species on or near the ROW, habitat favored by the species (valley annual grassland) occurs in the San Joaquin Valley between approximately MP 14 and MP 22.5, starting in the valley floor and proceeding to the vicinity of the Tejon Pump Station (EPNG 2003a). Literature records exist for extant populations "at the base of the Tehachapis on Tejon Ranch" (USFWS 1998). According to Pruett (2000), the potential habitat at construction

locations between approximately MP 14 and MP 22.5 is "extremely marginal" in quality for the blunt-nosed lizard. He attributed this to a lack of shrubs for cover.

California Condor

The California condor is federally and State listed as endangered. The Sespe California Condor Sanctuary is located in the Los Padres National Forest to the south of the existing pipeline. The area mapped as condor habitat by CNDDB comes within 4 miles of the nearest point on the pipeline corridor on the Tejon Ranch (approximately MP 15). According to the USFWS, California condors regularly forage in the Tehachapi Mountains and foothills (Palmer 2001). Therefore, it is possible that California condors could forage in the vicinity and possibly fly over or scavenge in and near construction locations. Potential occurrence on the pipeline is low and incidental.

Yuma Clapper Rail

The Yuma clapper rail is federally listed as endangered, and State listed as threatened. Yuma clapper rails inhabit freshwater or brackish streamsides and marshes. This species requires wet substrates, such as mudflats, sandbars, or slough bottoms, and prefers dense stands with mostly mature herbaceous or woody plants exceeding 15 inches in height. Yuma clapper rails are known to occur along the lower Colorado River from Lake Mead to Mexico. CNDDB records indicate a known occurrence of Yuma clapper rails within 300 feet of the construction location at MP 303, in a backwater marsh (EPNG 2003b).

Southwestern Willow Flycatcher

The southwestern willow flycatcher, a federally listed endangered species, is a small, migratory bird that occurs from the southwestern United States and Mexico. It is found in dense riparian habitats along streams, rivers, reservoirs, and other wetlands that are characterized by cottonwood, willow, boxelder, Russian olive, and salt cedar. Suitable habitat is present between MP 301.5 and MP 303.25 and in adjoining areas along the Colorado River (EPNG 2003b).

San Joaquin Kit Fox

The San Joaquin kit fox is federally listed as endangered and State listed as threatened. This species uses several plant communities, including those extensively modified by humans (USFWS 1998). The San Joaquin kit fox is associated with non-native annual grasslands as well as orchards and pastures. The species occurs from the San Joaquin Valley to its eastern foothills (CDFG 1980). Habitat for the San Joaquin kit fox is

estimated to occur from approximately MP 0 to MP 40 (EPNG 2003a). CNDDB records denote kit fox habitat on and along the pipeline corridor from approximately MP 0 to MP 19.2. Similar habitat features are present from approximately MP 19.2 through MP 40 (EPNG 2003a).

Tipton Kangaroo Rat

The Tipton kangaroo rat is federally and State listed as endangered. This is one of three subspecies of the San Joaquin kangaroo rat. This subspecies is limited to arid land communities of the Tulare Basin or the San Joaquin Valley floor (USFWS 1998). The foothills of the Tehachapi Mountains are the southern and western extent of the subspecies range. Tipton kangaroo rats inhabit areas with sparsely scattered shrubs and a ground cover of mostly introduced and native annual grasses and forbs. The most important plant community for the Tipton kangaroo rat is iodine bush shrubland (Valley Sink Scrub). No valley sink scrub was observed by field biologists along the pipeline corridor in the San Joaquin Valley (EPNG 2003a). Potential non-native annual grassland habitat for the Tipton kangaroo rat does occur along the Line 1903 route between approximately MP 14 and MP 45 (EPNG 2003a).

Desert Tortoise

The desert tortoise is federally and State listed as threatened. This species occurs over large areas of the Mojave Desert. The species occurs in desert scrub and desert washes where soils are friable for burrowing. The desert tortoise is known to occur from approximately MP 40, near the town of Tehachapi, to the terminus at MP 303.50, near Blythe—although it probably makes little use of the agricultural areas. The pipeline traverses the Fremont Kramer Unit of Critical Habitat for the desert tortoise, between approximately MP 84 and MP 109 in the vicinity of Edwards Air Force Base. The ROW lies adjacent to the Chemuehevi Critical Habitat Unit near Danby Lake (MP 240 to MP 250) (EPNG 2003a).

No tortoise burrows or other signs were observed by survey crews directly within the 600 by 100-foot survey area for each location. Desert tortoises could, however, be using the construction locations if their burrows are up to 0.5 mile away (Walker 2000). Field crews encountered desert tortoises at approximately MP 109 and MP 273. This species could occur within the Cadiz interconnect and lateral ROW.

Bald Eagle

The bald eagle is federally listed as threatened and State listed as endangered. This species is a local winter migrant in southern California, where it frequents large reservoirs and rivers (CDFG 2000). There is a moderately sized reservoir (Brite Lake) in the town of Tehachapi within 0.25 mile of the pipeline at MP 32.00. While no data are available that document use by bald eagles, attributes of this reservoir were identified by field surveyors as potential bald eagle habitat (foraging and non-nesting). Some perches are available in the area, predominantly oaks (EPNG 2003a).

State-Listed Species

Swainson's Hawk

The Swainson's hawk is State listed as threatened and a Federal species of concern. This Neotropical migrant formerly ranged throughout lowlands in California, with the exception of portions of the desert regions. Today, this species is restricted to portions of the Central Valley and Great Basin in California. Swainson's hawks could potentially use grassland habitats on the Tejon Ranch in the San Joaquin Valley, especially near riparian areas or tall trees. In neighboring states, Swainson's hawks are known to use desert habitats in addition to grasslands and could, therefore, be incidental anywhere along the pipeline (EPNG 2003a).

Western Yellow-Billed Cuckoo,

The western yellow-billed cuckoo is State listed as endangered and a Federal species of concern. This species is known to utilize the riparian vegetation associated with the Colorado River. The western yellow-billed cuckoo has been documented approximately 0.5 mile from the pipeline ROW, at approximately MP 299 through MP 300. This record is 1.25 miles from the closest construction location.

Gila Woodpecker

The Gila woodpecker is State-listed as endangered. The species is known to utilize the riparian vegetation associated with the Colorado River. The closest CNDDB record of Gila woodpeckers is approximately 2.5 miles down river from the pipeline.

Elf Owl

The elf owl is State-listed as endangered and has been documented using habitats along the Colorado River approximately 1.25 miles from the nearest construction

location. According to Nicol (2001), elf owls have not been confirmed at that location in at least 5 years.

Mohave Ground Squirrel

The Mohave ground squirrel is State listed as threatened and a Federal species of concern. This species is restricted to the western portion of the Mohave Desert (CDFG 1980). The Mohave ground squirrel uses open desert scrub, alkali sinks, and Joshua tree woodland, where soils are sandy and gravelly. Known occurrences are mapped by CNDDB along the pipeline from approximately MP 79 through MP 132.2. In addition, field crews identified potential habitat from approximately MP 50 to MP 79 (EPNG 2003a).

Species of Concern

Other animal species may occur in the Project area that are of additional concern to the State of California (CSC), the BLM (BLMS), or USFWS (FSC) (see Table 4.2-3). Potential habitat for the following species of concern was specifically identified along the pipeline ROW.

Yellow-Blotched Salamander

The yellow-blotched salamander is a Federal and State species of concern, and a BLM-sensitive species. This species is known to occur approximately 1 mile from the pipeline, at approximately MP 39. The yellow-blotched salamander uses forests and well-shaded canyons, oak woodlands, and old chaparral (CDFG 2000). Potential habitat was identified by field crews between approximately MP 24 and MP 32 (EPNG 2003a).

Silvery Legless Lizard

The silvery legless lizard is a Federal and State species of concern. This fossorial lizard occurs in the San Joaquin Valley and the Tehachapi Mountains (CDFG 2000). Silvery legless lizards use valley foothill and grassland habitats. Habitat for this species occurs along the pipeline ROW between approximately MP 14 and MP 40 (EPNG 2003a).

San Joaquin Coachwhip

The San Joaquin coachwhip (or whipsnake) is a Federal and State species of concern. This species is known to occur in the San Joaquin Valley and the surrounding foothills of the Tehachapi Mountains. The San Joaquin coachwhip occupies open terrain and is

most abundant in grass, desert, scrub, and pasture habitats (CDFG 2000). This species seeks cover in rodent burrows, bushes, and rock piles. Along the pipeline ROW, habitat exists for the San Joaquin coachwhip between approximately MP 14 and MP 25 (EPNG 2003a).

California Horned Lizard

The California horned lizard is a Federal and State species of concern, and a BLM-sensitive species. This species is known to occur in the San Joaquin Valley. It uses a variety of habitats, including non-native annual grasslands. Along the pipeline ROW, annual grassland habitat exists between approximately MP 14 and MP 40 (EPNG 2003a).

Mojave Fringe-Toed Lizard

The Mojave fringe-toed lizard is a State species of concern and a BLM-sensitive species. This species is found in desert regions of southern California. It uses fine, loose, wind-blown deposits in sand dunes and other sandy habitats. Rodent burrows and the bases of shrubs are also used for cover. According to Jones (2001), Mojave fringe-toed lizards are known to range as far as the Barstow area and could be expected in the sand dunes associated with the Mojave River floodplain. Habitat for this species occurs along much of the pipeline ROW, from approximately MP 90 through MP 303.

Rosy Boa

The rosy boa is a Federal species of concern. This species is a widely, but sparsely, distributed desert snake in southern California. Rosy boas use scrub flats with good cover in the desert and may prefer desert canyons and washes. Potential habitat in the Project area occurs from approximately MP 50 to MP 293 (EPNG 2003a).

Burrowing Owl

The burrowing owl is a Federal and State species of concern, and a BLM-sensitive species. This species uses open dry grasslands and desert habitats where other animals have created burrows. Burrowing owl sign was observed along the ROW between approximately MP 14 and MP 22.5 in association with California ground squirrel colonies (EPNG 2003a). This species is common in the agricultural areas of the lower Colorado River Valley, along irrigation ditches and levees. Burrowing owls were observed in the vicinity of the ROW near approximately MP 298 (EPNG 2003a).

Prairie Falcon

The prairie falcon is a Federal and State species of concern. This species is found in agricultural fields and desert scrub areas (CDFG 2000). Prairie falcons are known to nest in the Newberry, Marble, and Little Maria Mountains that surround the pipeline ROW. This species forages widely and may incidentally fly over or otherwise use the area that the pipeline crosses. No nesting habitat is on or close to (less than 1 mile) any proposed construction location (EPNG 2003a).

Ferruginous Hawk

The ferruginous hawk is a Federal and State species of concern. This species is a winter visitor to the Central (San Joaquin) Valley, where it occurs in open grassland habitats. Ferruginous hawks are expected to use habitats along the ROW between approximately MP 14 and MP 22.5 (EPNG 2003a).

Golden Eagle

The golden eagle is a State species of concern and a Federal fully protected species. This species is a year-round resident in rolling foothills mountain areas, sage-juniper flats, and deserts. The golden eagle nests in cliff-walled canyons or large trees in open areas. Golden eagles were observed during Project surveys in the Tehachapi Mountains (from approximately MP 22.5 to MP 50) (EPNG 2003a).

Northern Harrier

The northern harrier is a State species of concern. This species nests and forages in grasslands, from salt grass in desert sinks and coastal and freshwater marshes to mountain meadows. The northern harrier nests on the ground in shrubby vegetation. This species was observed in the Lower Colorado River Valley during Project surveys (from approximately MP 293 to 303) (EPNG 2003a).

Mountain Plover

The mountain plover is a Federal and State species of concern. This species is a bird of open, flat tablelands (Knopf 1996). The mountain plover avoids montane landscapes and is found primarily in arid areas. This species breeds in the Great Plains, although it winters primarily in the Sacramento, San Joaquin, and Imperial Valleys of California (CDFG 2000). According to Knopf (1996), mountain plovers spend 75 percent of their time in California on plowed fields, heavily grazed annual grasslands, and burned fields.

This species was proposed for Federal listing as threatened, but USFWS has determined that it does not meet the criteria for listing (Federal Register 2003).

Mountain plovers could occur in the agricultural fields associated with the construction location at approximately MP 2.10 (SoCal/Wheeler Ridge interconnect). Mountain plovers also would be expected to use the non-native annual grassland present on the Tejon Ranch between approximately MP 17 and MP 22.48. In this area, California ground squirrel colonies are present on or near five construction locations (EPNG 2003a). Mountain plovers are known to winter in agricultural fields of the Imperial Valley south of the Cibola National Wildlife Refuge (NWR). It is possible that some wintering birds also would use the Palo Verde Valley north of the Cibola NWR in the Project area. In this area, five construction locations are associated with agricultural fields.

White-Faced Ibis

The white-faced ibis is a State and Federal species of concern. This species is a rare visitor to the San Joaquin Valley where it utilizes wetlands and flooded pastures. This species could occur along the ROW between approximately MP 0 and MP 14, if cultivated fields were flooded. White-faced ibises have been observed feeding in flooded agricultural fields around Blythe in the Palo Verde Valley (from approximately MP 293 to 303.5).

Aleutian Canada Goose

The Aleutian Canada goose was federally de-listed in 2001 but must be monitored for 5 years. This species is a regular visitor to the San Joaquin valley and uses the same habitats as the white-faced ibis. The species could occur along the ROW between approximately MP 0 and MP 14, if cultivated fields were flooded.

American Bittern

The American bittern, a Federal species of concern, requires densely vegetated freshwater wetlands. The American bittern could use some habitats along the Colorado River but primarily occurs in California north of the Project area.

Western Least Bittern

The western least bittern is a Federal species of concern. This species requires densely vegetated freshwater wetlands. The western least bittern is known to have a large population on the Colorado River system.

Snowy Egret

The snowy egret is a Federal species of concern. This species uses dense marshes, wetlands, and agricultural areas along the Colorado River.

Long-Billed Curlew

The long-billed curlew is a Federal and State species of concern. Large wintering flocks of long-billed curlews are also known from the Imperial and Palo Verde Valleys along the Colorado River.

Vermilion Flycatcher, Sonoran Yellow Warbler, Yellow Breasted Chat, Summer Tanager

The vermilion flycatcher, Sonoran yellow warbler, yellow breasted chat, and summer tanager are all State species of concern. These species occur in the riparian area along the Colorado River corridor. They all are known to utilize the deciduous woodland composed of cottonwood and willow. Today, this habitat type is largely converted to tamarisk.

Bendire's Thrasher

Bendire's thrasher is a Federal species of concern. This species is a very localized spring and summer breeding bird in flat areas of desert scrub habitats in the Mojave Desert area. Bendire's thrasher prefers scattered stands of thorny shrubs and cactus for cover, foraging, and nesting. Although this species is not expected to nest in the pipeline ROW, nesting could occur adjacent to the line anywhere between approximately MP 50 and MP 293 (EPNG 2003a).

Crissal Thrasher

Crissal thrasher is a localized resident of southeastern deserts in desert riparian and desert wash habitats. This species nests in dense scrub vegetation along streams and washes. Although the species is not expected to nest in the pipeline ROW, it could be present adjacent to the line anywhere desert riparian or wash habitat is present.

Le Conte's Thrasher

Le Conte's thrasher is a Federal and State species of concern. This species is a desert resident and is primarily found in open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats (CDFG 2003). Le Conte's thrasher nests in a dense, spiny shrub or densely branched cactus in desert wash habitat. This species is

known to occur in the vicinity of the proposed ROW for the Cadiz interconnect and lateral (CDFG 2003).

Loggerhead Shrike

The loggerhead shrike is a Federal and State species of concern. This species is a common resident and winter visitor to lowlands and foothills throughout California. The loggerhead shrike prefers open habitats with scattered shrubs, trees, posts, fences, and other perches. This species is most commonly found in valley foothill hardwoods (Tehachapi Mountains), Joshua tree, and desert riparian habitats. The loggerhead shrike could occur anywhere along the pipeline ROW (EPNG 2003a).

Short-Eared Owl

The short-eared owl is a Federal species of concern. This species is a winter migrant in the San Joaquin Valley and the western Sierra Nevada foothills, which could include the Tehachapi Mountains. The short-eared owl uses open, treeless areas with perches, such as annual grasslands and oak savannahs. This species could use habitats between approximately MP 14 and MP 40 during winter (EPNG 2003a).

Costa's Hummingbird

Costa's hummingbird is a Federal species of concern. This species is a Neotropical migrant that nests in desert scrub habitats. There is potential habitat for this species from approximately MP 50 through MP 293 (EPNG 2003a).

Lewis' Woodpecker

Lewis' woodpecker is a Federal species of concern. This species is expected to occur in the Tehachapi Mountains either year round or during winter. The Lewis' woodpecker uses open pine-oak woodlands and could potentially occur along the pipeline ROW between approximately MP 24 to MP 40 (EPNG 2003a).

Hepatic Tanager

The hepatic tanager is a State species of concern. This species is known to occur in the vicinity of the proposed ROW for the Cadiz Interconnect and Lateral (CDFG 2003).

Brewer's Sparrow

Brewer's sparrow is a Federal species of concern. This species is known to winter in the open desert and open grasslands in the San Joaquin Valley in California. Potential habitat occurs between approximately MP 14 and MP 22.5 (EPNG 2003a).

Bats

The California leaf-nosed bat (CSC, BLMS), pallid bat (CSC, BLMS), spotted bat (FSC, CSC, BLMS), greater western mastiff bat (FSC, CSC, BLMS), small-footed myotis (FSC, BLMS), long-eared myotis (FSC, BLMS), fringed myotis (FSC, BLMS), long-legged myotis (FSC), Yuma myotis (FSC, CSC, BLMS), pale Townsend's big-eared bat (FSC), and Pacific western big-eared bat (FSC) could occur at or near proposed construction locations. All of these bat species roost in trees, crevices, rock outcrops, and/or buildings. Few or no roosting habitat features occur in the ROW. CNDDB occurrence records indicate that the leaf-nosed bat and the pallid bat are using abandoned mines in surrounding desert mountains, including the Ship and Big Maria Mountains (CDFG 2001), as well as from the vicinity of the Cadiz interconnect and lateral ROW (CDFG 2003). Bats are known to use the lava tubes near Pisgah Crater, which is approximately 2 miles southwest of MP 161.00 and a construction location at MP 160.80 (Egan 2001). Because bats can use so many microhabitats from rock crevices to abandoned buildings and can fly great distances to forage, it was assumed that any of these species could occur on an incidental basis anywhere along the pipeline ROW (EPNG 2003a).

Tehachapi Pocket Mouse

The Tehachapi pocket mouse is a Federal and State species of concern. This species is known to occur within 2 miles of the pipeline (CDFG 2000) at approximately MP 45. The Tehachapi pocket mouse uses arid grasslands and desert shrub habitats like those that occur approximately between MP 24 and MP 50 (EPNG 2003a).

San Joaquin Pocket Mouse

The San Joaquin pocket mouse is a Federal and State species of concern, and a BLM sensitive species. This species occurs along the eastern side of the San Joaquin Valley (Williams 1986). The San Joaquin pocket mouse occurs in dry, open grassland and scrub areas in the Central Valley (CDFG 2000). The CNDDB reports a known occurrence of this species within 2 miles of the pipeline corridor, at approximately MP 45. Field crews identified potential habitat between approximately MP 14 and MP 50 (EPNG 2003a).

Southern and Tulare Grasshopper Mice

Both the southern grasshopper mouse and the Tulare grasshopper mouse are Federal and State species of concern. The Tulare grasshopper mouse is also a BLM sensitive

species. Both of these species use desert scrub habitats within the Mojave Desert and the San Joaquin Valley. Although the Tulare mouse is expected only within the San Joaquin Valley (approximately MP 0 through 22.5), the southern grasshopper mouse is expected to occur anywhere on the ROW (approximately MP 0 through MP 303.5) (EPNG 2003a).

Short-Nosed Kangaroo Rat

The short-nosed kangaroo rat is a Federal species of concern. This species is one of three subspecies of the San Joaquin kangaroo rat. Extant populations of this subspecies occur in the Wheeler Ridge area (USFWS 1998). The short-nosed kangaroo rat uses grassland habitats, as well as desert scrub associations. This species has also been found along levees and could occur in agricultural areas. Potential habitat for this species along the pipeline occurs between approximately MP 0 and MP 22.5 (EPNG 2003a).

4.2.2 Regulatory Setting

Federal

Endangered Species Act of 1973 (16 USC §1531 et seq.; 50 CFR Parts 17 and 222)

This act includes provisions for protection and management of species that are federally listed as threatened or endangered and designated critical habitat for these species. The USFWS is the administering agency for the above authority for terrestrial and avian species. EPNG, as a non-federal party, is assisting the BLM in satisfying requirements of Section 7 of the Endangered Species Act through ongoing consultation with USFWS. This process would lead to the issuance of a biological opinion by USFWS for the Project. This biological opinion would describe whether the Project is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat and ways for EPNG to mitigate any potential impacts. EPNG would be required to adhere to all requirements and mitigation proposed by USFWS in their Biological Opinion. The Biological Opinion for the Project has not been published, but would be required prior to certification of the Final EIR/EA.

Migratory Bird Treaty Act (16 USC §703-711; 50 CFR Subchapter B)

This act includes provisions for protection of migratory birds, including basic prohibitions against any taking not authorized by Federal regulation. The administering agency for the above authority is the USFWS.

Rivers and Harbors Act (§10; 33 USC §201 et seq.)

This act protects waters of the United States. The administering agency for the above authority is the USACE.

Clean Water Act of 1977 (33 USC §1251-1376; 30 CFR §330.5[a]26)

These code sections provide for the protection of wetlands. The administering agency for the above authority is the USACE.

Executive Order 11990—Protection of Wetlands (May 24, 1977)

This executive order (EO) provides for the protection of wetlands. The administering agency for the above authority is the USACE.

California Desert Area Conservation Area Plan 1980 as Amended

Long-range planning document intended to establish guidance for the management of public lands of the California Desert by the Bureau of Land Management.

State

California Endangered Species Act of 1984 (California Fish and Game Code §2050-2098)

This act includes provisions for the protection and management of species listed as endangered or threatened, or designated as candidates for such listing. The act includes a requirement for consultation "to ensure that any action authorized by a State lead agency is not likely to jeopardize the continued existence of any endangered or threatened species . . . or results in the destruction or adverse modification of habitat essential to the continued existence of the species" (§2090). Plants of California

declared to be endangered, threatened, or rare are listed at 14 CCR §670.2. Animals of California declared to be endangered, threatened, or rare are listed at 14 CCR §670.5. The administering agency for the above authority is the CDFG. EPNG is in the process of consulting with CDFG. Any requirements or mitigation proposed by CDFG during this process would be required during construction and operation of the Project, in addition to these described in the EIR/EA.

Native Plant Protection Act of 1977 (California Fish and Game Code §1900 et seq.)

This act lists State-designated rare and endangered plants and provides specific protection measures for identified populations. The administering agency for the above authority is the CDFG.

California Species Preservation Act of 1970 (California Fish and Game Code §900-903)

This act includes provisions for the protection and enhancement of the birds, mammals, fish, amphibians, and reptiles of California. The administering agency for the above authority is the CDFG.

California Fish and Game Code (§900-903)

These code sections prohibit the taking or possessing of any bird egg or nest. The administering agency for the above authority is the CDFG.

California Fish and Game Code (§3511 and 5050)

These code sections prohibit the taking or possessing of birds and reptiles listed as "fully protected." The administering agency for the above authority is the CDFG.

California Fish and Game Code (§1930-1933)

These code sections provide for the Significant Natural Areas program and database. The administering agency for the above authority is the CDFG.

California Environmental Quality Act (PRC §21000 et seq.)

This act provides for protection of the environment with the State of California. For the Project, the administering agency for the above authority is the CSLC.

Local

San Bernardino County Desert Native Plant Protection Ordinance

This ordinance requires a Project applicant to obtain a permit for the removal of smoketree (*Dalea spinosa*), all mesquites (*Prosopis* spp.), all species of the family Agavaceae (i.e., yucca, century plant, and nolina), creosote rings (10 feet or greater in diameter), and all Joshua trees (SBC 2003). Project construction in or adjacent to desert washes may affect smoke trees or mesquite, and Joshua trees are present at some of the proposed construction sites in the Mojave Desert. Creosote bush is present at some of the construction sites, and some individuals may qualify for protection under the San Bernardino County ordinance.

In accordance with this ordinance, the Applicant would acquire appropriate permits for protected species that would be removed at sites in San Bernardino County, when such species cannot be entirely avoided during construction or maintenance operations.

4.2.3 Significance Criteria

Vegetation

An adverse impact on vegetation was considered significant and would require mitigation if Project construction or operation activities would:

- disturb a substantial portion of the vegetation type within a local region to the point where natural or enhanced regeneration could not restore vegetation to its pre-construction condition within 3 to 5 years;

- result in the long-term (more than 5 years) reduction or alteration of unique, rare, or special concern vegetation types, riparian vegetation, or natural communities;

- introduce new, or lead to the expanded range of existing, invasive noxious weed species or soil pests, so that they interfere with crop production or successful revegetation of natural communities;

- create substantial barriers for dispersal of native plant species; or

- cause a spill or leak that would contaminate the soil to the extent of eradicating the existing vegetation, inhibiting revegetation, or migrating to other areas and affecting soil and water ecology via erosion and sedimentation.

Wetlands

An adverse impact on wetlands was considered significant and would require mitigation if Project construction or operation activities would:

- fill or alter a wetland or vernal pool, resulting in a long-term change in its hydrology or soils, or the composition of vegetation of a unique, rare, or special concern wetland community;

- remove or significantly prune overstory tree species in a manner that would affect wetland functions related to bank stabilization, stream temperature, or habitat; or

- cause short- or long-term violations of Federal or State water quality standards for streams that lead to wetlands, measured as in-stream elevated turbidity readings or decreased dissolved oxygen (DO) levels.

Fisheries

An adverse impact on aquatic resources was considered significant and would require mitigation if Project construction or operation activities would:

- substantially change the diversity or numbers of any aquatic species or interfere with the survival, growth, or reproduction of affected populations;

- introduce new aquatic species into an area;

- substantially interfere with the movement, range, or spawning of any resident or anadromous fish; or

- cause substantial deterioration of existing fish habitat.

"Substantial" in this context means a long-term (3 years or more) impact that can be verified by repeated measurement.

Wildlife

An adverse short- or long-term impact on wildlife resources was considered significant and would require mitigation if Project construction or operation activities would:

- change the diversity or numbers of any substantial portion of a local population of animal species or interfere with the survival, growth, or reproduction of affected wildlife populations;

- substantially interfere with the movement of migratory birds or other wildlife;

- result in the substantial long-term loss of existing wildlife habitat;

- introduce new, invasive wildlife to an area; or

- create a potential health hazard or involve the use, production, or disposal of materials in a manner that would be expected to pose a hazard to a wildlife or fish population in the Project area.

Threatened, Endangered, and Special-Status Species

An adverse impact on federally or State-listed species or species proposed for listing was considered significant and would require mitigation if Project construction or operation activities would:

- reduce the abundance of sensitive species, including species under the protection of the Migratory Bird Treaty Act, that occur within the Project area;

- result in the loss or alteration of existing or proposed critical habitat for one or more listed species;

- cause a temporary loss or alteration of habitat important for one or more listed species that could result in avoidance by a listed species, or that could cause increased mortality or lowered reproductive success of the species;

- result in direct or indirect impacts on candidate or sensitive species populations, or their habitat, that would contribute to or result in the Federal or State listing of the species (e.g., substantially reducing species numbers or resulting in the permanent loss of habitat essential for the continued existence of a species); or

- create a potential health hazard or involve the use, production, or disposal of materials that pose a hazard to a special-status species population in the Project area.

4.2.4 Impact Analysis and Mitigation

EPNG would implement the Protection Measures for Special Status Species During Construction (Appendix D8). These measures would reduce impacts to biological resources during construction. The following describes less than significant impacts (Class III impacts), followed by potentially significant impacts and mitigation measures.

Loss of Vegetation

The total acreage of vegetation that would be permanently lost due to the construction of aboveground facilities is 8.05 acres. Construction of the Cadiz Lateral would require permanent maintenance of 39.02 acres of permanent ROW. As described in EPNG's UECRM Plan (Appendix D1), routine vegetation maintenance clearing would not be done more frequently than every three years. To facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be maintained annually in a herbaceous state. Routine vegetative maintenance would not occur between April 15 and August 1 of any year. Undisturbed vegetation occupies 4.77 acres of the total area to be permanently disturbed, and previously disturbed vegetation occupies the other 42.3 acres. Most of the undisturbed vegetation that would be lost is annual grassland. Permanent habitat loss is not considered a significant impact on special-status species (other than for listed or candidate species

under the State and Federal Endangered Species Acts) unless extensive areas of suitable habitat are degraded or somehow made unsuitable, or areas supporting a large proportion of the species population are substantially and adversely affected.

Disturbance of Vegetation

EPNG's UECRM Plan (Appendix D1) would be implemented immediately following construction. The pipeline construction ROW and other areas disturbed by construction activities would be re-seeded with native grasses and shrubs in previously disturbed ROW areas and rangeland areas on public lands, re-seeded on privately owned rangelands, and returned to crop production in cropland areas. EPNG would use seed mixes recommended by the Natural Resource Conservation Service, as provided in Table 4.2-4, except on BLM lands. On BLM lands, EPNG would use the seed mix required by BLM, as provided in Table 4.2-5.

Native herbaceous species are expected to establish during the first growing season after reclamation. Herbaceous plant cover and density in reclaimed areas are expected to be similar to pre-disturbance conditions within approximately 5 years after reclamation. Post-reclamation monitoring would be conducted during the first and second growing seasons to evaluate reclamation success. Other post-reclamation activities to be completed for the Project are provided in the UECRM Plan (Appendix D1).

Table 4.2-4. Reclamation Seed Mixes Recommended by the Natural Resource Conservation Service

Common Name/ Variety / Scientific Name[1]	Application Rate-Broadcast (Pounds PLS per acre)	Percent of Mix
Recommended Reclamation Seed Mix for Kern County (San Joaquin Valley)[2]		
Annual fescue – Zorro cultivar *Vulpia myuros*	4	15
Purple needlegrass *Nasella pulchra*	5	19
California oniongrass *Melica californica*	5	19
Blue wildrye *Elymus glauca*	3	12
California barley *Hordeum californicum*	5	19
California buckwheat – Duro cultivar *Eriogonum fasciculatum*	4	15
Recommended Reclamation Seed Mix for Kern County (Tehachapi Mountains)[3]		
Annual fescue – Zorro cultivar *Vulpia myuros*	4	11
California brome *Bromus carinatus*	3	8
California oniongrass *Melica californica*	4	11
Coast Range melic *Melica imperfecta*	3	8
Nodding stipa *Nassella cernua*	4	11
Purple needlegrass *Nasella pulchra*	4	11
Pine bluegrass *Poa secunda*	4	11
California poppy *Eschscholzia californica*	1	3
Rose clover—locally adapted variety *Trifolium hirtum*	9	25
Recommended Reclamation Seed Mix for San Bernardino and Riverside Counties, California (Mojave and Sonoran Deserts)[4]		
Indian ricegrass *Achnatherum hymenoides*	9.2	11
Squirreltail *Elymus elymoides*	11.4	14
Desert needlegrass *Achnatherum speciosum*	10.0	12
Desert globemallow *Sphaeralcea ambigua*	4.4	5

Common Name/ Variety / Scientific Name[1]	Application Rate-Broadcast (Pounds PLS per acre)	Percent of Mix
Wild heliotrope *Phacelia distans*	6.0	7
California poppy *Eschscholzia parishii*	7.2	9
Lupine *Lupinus arizonicus*	17.6	21
Desert marigold *Baileya pleniradiata*	2.0	2
Fourwing saltbush *Atriplex canescens*	8.4	10
Desert saltbush *Atriplex polycarpa*	0.8	1
White bursage *Ambrosia dumosa*	5.0	6
Recommended Reclamation Seed Mix for Blythe Area (Riverside County)[5]		
Indian ricegrass *Achnatherum hymenoides*	9	7
Squirreltail *Elymus elymoides*	11	9
Desert needlegrass *Achnatherum speciosum*	10	8
Big galleta *Pleuraphis rigida*	10	8
Desert mallow *Sphaeralcea ambigua*	4.5	4
Wild heliotrope *Phacelia distans*	6	5
California poppy (= Parish's goldenpoppy) *Eschscholzia parishii*	7	6
Desert lupine *Lupinus arizonicus*	17	14
Desert marigold *Baileya pleniradiata*	3	2
Sand verbena *Abronia villosa*	10	8
Dune primrose *Oenothera deltoides*	8	6
White evening primrose *Camissonia pallida*	9	7
Fourwing saltbush *Atriplex canescens*	9	7
Creosote bush *Larrea tridentata*	5	4

Common Name/ Variety / Scientific Name[1]	Application Rate-Broadcast (Pounds PLS per acre)	Percent of Mix
White bursage *Ambrosia dumosa*	5	4

PLS = Pure live seed.

[1] These plant names follow nomenclature used by the Natural Resource Conservation Service.

List of Sources:
[2] Ramirez 2000.
[3] Lee 2001.
[4] Aguayo 2001.
[5] Bickel 2001

Table 4.2-5. Reclamation Seed Mixes of Native Species for BLM Lands

Common Name/ Variety / Scientific Name	Application Rate/Spacing* (Pounds per acre
Seed Mix for Mojave-Creosote-Bursage Scrub	
Indian rice grass *Achnatherum hymenoides*	1.5
Galleta grass *Pleuraphis rigida*	1.5
Wooly plantain *Plantago patagonica & P. ovata*	1
Desert marigold *Baileya pleniradiata*	1
Creosote bush *Larrea tridentata*	1.5
Bursage *Ambrosia dumosa*	2
Green Mormon tea *Ephedra viridis*	0.5
Seed Mix for Desert Saltbush Scrub	
Indian ricegrass *Achnatherum hymenoides*	1.5
Stipa grass (desert needlegrass) *Achnatherum speciosum (= Stipa speciosa)*	1.5
Desert fiddleneck (checker fiddleneck, devil's lettuce) *Amsinckia tessellata*	1.0
Saltbush (fourwing saltbush) *Atriplex canescens*	1.0
Saltbush (desert saltbush) *Atriplex polycarpa*	1.0
Rabbitbush *Chrysothamnus* sp.	1.0
Blackbrush *Coleogyne ramosissima*	1.0
Seed Mix for Blackbrush Mixed Scrub	
Galleta grass *Pleuraphis rigida*	1.5
Stipa grass (desert needlegrass) *Achnatherum speciosum*	1.5

Wooly plantain *Plantago patagonica & P. ovata*	1.0
Desert mallow *Sphaeralcea ambigua*	1.0
Bursage *Ambrosia dumosa*	1.0
Rabbitbush *Chrysothamnus* sp.	1.0
Blackbrush *Coleogyne ramosissima*	1.0

* Seeding rates are listed as pure live seed based on drill seeding. The rate would be doubled if hydroseeded or broadcast.

The total acreage that would be temporarily disturbed is 217.12 acres. This includes disturbance to previously disturbed areas, residential lands, cultivated cropland, and vegetation cover in native condition. Vegetation within the construction ROW and other disturbance areas would be removed or disturbed during clearing and grading activities. One riparian/wetland area, classified as palustrine emergent/palustrine scrub shrub type, would be affected by construction activities at MP 44.59 (Garlock Fault pipeline abandonment/realignment). Much of the habitat disturbance would occur in previously disturbed areas or otherwise altered habitat (137.34 acres), and additional disturbance would occur in annual grassland (16.02 acres). Temporary habitat loss is not considered a significant impact on special-status species (other than for listed or candidate species under the State and Federal Endangered Species Acts) unless extensive areas of suitable habitat are degraded or somehow made unsuitable, or areas supporting a large proportion of the species population are substantially and adversely affected. These conditions are not met by the Project; consequently, this impact would be less than significant.

Effects on Special-Status Fish and Aquatic Habitat

The only flowing waters, aquatic areas, riparian areas, or wetlands that provide fish habitat along the Project ROW occur in the Colorado River. In this area, the pipeline was already buried well below ground using directional boring techniques. The pipe returns near the surface on each side of the river, approximately 500 feet or more from the general water's edge. Construction locations are no closer than 0.4 mile from the river's edge. For this reason, no aquatic special-status species are likely to be affected as a result of construction activities for the conversion of the pipeline. Maintenance or unforeseen emergency repairs near the Colorado River could affect aquatic habitat for the federally and State-listed razorback sucker and bonytail chub. EPNG would consult

with all applicable resource agencies concerning any activities in the Colorado River area.

Other streams and rivers present in the Project area are intermittent and dry most of the year. EPNG would implement the provisions of the WWCM Procedures (Appendix D2), including the use of silt fencing, at or near any of these waterbodies. The Applicant has also prepared a SWPPP (Appendix D3) and a SPCC Plan (Appendix D4) that contains spill prevention and response procedures that meet the requirements of State and Federal agencies. Finally, the applicant would implement measures in the UECRM Plan (Appendix D1). Measures contained in these EPNG-prepared compliance plans would reduce potential impacts on special-status aquatic species during construction activities to less than significant levels.

Impact BIO-1: Temporary Disturbance of Wetlands

Construction and maintenance activities in wetlands could result in loss of wetland values and functions. (Potentially Significant, Class II)

One riparian/wetland area, classified as palustrine emergent/palustrine scrub shrub type, would be affected by construction activities at MP 44.59 (Garlock Fault pipeline abandonment/ realignment). A total of 8.56 acre of temporary disturbance would occur at this location. Construction in this area has been designed to avoid willow stands and to confine the disturbance to an herbaceous wetland dominated by sedges and rushes.

One seasonal wetland at Troy Lake would be temporarily affected by construction. A portion of this intermittently dry lake would be temporarily affected by the repair of a pipeline anomaly at MP 149.10. No permanent impacts are anticipated. Construction would not occur when the area is flooded. A total of 0.69 acres of temporary disturbance would occur at this location.

The Applicant has prepared and would implement the provisions of the WWCM Procedures (Appendix D2), including the use of silt fencing, a SWPPP (Appendix D3), and an SPCC Plan (Appendix D4) that contains spill prevention and response procedures that meet the requirements of State and Federal agencies.

Mitigation for Impact BIO-1:

MM BIO-1 ***Restoration Plan.*** *Sixty days prior to construction or maintenance in a wetland, the Applicant would develop a Restoration Plan to meet resource*

agency requirements for each wetland affected by the Project. Unless otherwise agreed to by the resource agencies, this plan would include, but not be limited to, the following provisions: (1) Immediately prior to construction in a wetland, the Applicant would remove and stockpile outside the wetland the top 8 inches of soil from the wetland area. This soil would be replaced immediately following the completion of construction and the successful testing of the line. (2) The pipeline construction ROW would be re-vegetated with native sedges and rushes. If this is not feasible, due to limited supplies of appropriate species, the Applicant would implement a weed-control program in the wetland area for a period of 5 years to facilitate natural regeneration. Provisions for monitoring and performance criteria would be included in the Restoration Plan.

Rationale for Mitigation. The mitigation would ensure consultation with resource agencies prior to activities in or near wetlands. Additionally, the mitigation encourages avoidance, where possible, and requires restoration of hydrologic functions and vegetation at wetland sites. Impacts to any wetland sites in the Project area would be minor and temporary with this mitigation.

Impact BIO-2: Possible Spread of Noxious Weeds

Construction and maintenance activities could result in the spread of noxious weeds, to the detriment of native species. (Potentially Significant, Class II)

During field surveys conducted between December 2000 and March 2003, nine noxious weed species were identified in the ROW at construction locations (EPNG 2003a). The presence of each of these species, and the extent to which mitigation is required, vary by location. For example, although Mediterranean grass and filaree are included on some local noxious weed lists, these two species are essentially ubiquitous in the Mojave and Sonoran Desert regions. Site-specific mitigation under these conditions is of questionable effectiveness. Some noxious weeds, such as tamarisk (saltcedar), are so limited at construction locations that they can easily be avoided or removed entirely.

Measures to prevent the spread of noxious weeds are described in EPNG's Noxious Weeds Protection Plan (Appendix D5). To summarize, where noxious weeds were identified, the following preventative measures would be implemented by EPNG on Federal and State lands to prevent the spread of noxious weeds along the construction ROW:

- all construction equipment and Project vehicles would arrive at the work site clean and weed free.

- compressed air would be used to remove seeds, roots, and rhizomes from the equipment in known infestation areas prior to transport from the site. Alternately, truck wash stations may be used for this purpose, dependent on available water and the direction of the BLM.

- in areas with known infestations within the work area, vegetation and topsoil would be graded and stockpiled on the side of the ROW adjacent to the area from which they were stripped to isolate soil that may contain noxious weed seeds. This action would reduce the potential for following construction equipment to transport seeds, roots, or rhizomes down the ROW.

- reclamation of disturbed areas would be implemented immediately following construction.

- fertilizer would not be applied to reclaimed areas with known weed infestations, because nutrients can enhance the growth of weeds.

- straw bales used for sediment barriers or mulch would be certified weed-free.

- post-construction monitoring and treatment of weed infestation on the ROW would be implemented as needed.

The Applicant would implement measures in the Noxious Weeds Protection Plan, as well as measures in the UECRM Plan (Appendix D1) and WWCM Procedures (Appendix D2). In addition, the following measure would reduce the potential for the spread of noxious weeds during construction or maintenance activities.

Mitigation for Impact BIO-2:

MM BIO-2. ***Weed Control.*** *EPNG would implement the UERCM Plan and Noxious Weed Plan during construction and maintenance activities on all Project areas, including private and public lands. Additional provisions would include, but are not limited to: a water wash station or use of compressed air would be used for removing seeds from construction equipment where noxious weeds*

could be disturbed during construction or maintenance in order to prevent the spread of noxious weed seeds outside the area. The introduction of new weed species not already present in the area would be controlled by requiring the contractors to clean construction equipment before it is brought to the contractor yard or staging area for the construction spread.

Rationale for Mitigation. Cleaning equipment and revegetating disturbed areas would limit the spread of noxious weeds on both private and federal lands and facilitate the establishment of natural communities in the Project area.

Impact BIO-3: Potential Impacts on the San Emigdio Blue Butterfly

Maintenance activities could adversely affect host plants or larvae of the San Emigdio blue butterfly. (Potentially Significant, Class II)

Habitat for the San Emigdio blue butterfly, a Federal species of concern, is present between approximately MP 0 and MP 27.5. Adult butterflies would not be affected by construction activities; however, larvae could be affected if host plants (Atriplex=saltbush) are destroyed. Although no saltbush plants are within the construction locations in the species range, maintenance activities along the ROW could affect this species if host plants exist elsewhere between MP 0 and MP 27.5, or if the host plants establish during the operating life of the pipeline.

Mitigation for Impact BIO-3:

MM BIO-3a. ***Pre-Maintenance Surveys.*** *The Applicant would conduct pre-maintenance surveys for saltbush host plants for the San Emigdio blue butterfly in areas where habitat for such species is present (between MP 0 and MP 27.5).*

MM BIO-3b. ***Avoidance and Minimization Measures.*** *To the extent possible, maintenance activities would avoid the removal or crushing of saltbush plants between approximately MP 0 and MP 27.5. The Maintenance Plan would include procedures to be used to protect these plants.*

Rationale for Mitigation. Identifying the presence of potential host plants (saltbush) and avoiding or limiting impacts to these plants would reduce the potential for impacts to larvae of the San Emigdio blue butterfly to less than significant levels.

Impact BIO-4: Potential Impacts on the Blunt-Nosed Leopard Lizard

Construction and maintenance activities could result in mortality or loss of burrows for the blunt-nosed leopard lizard. (Potentially Significant, Class I)

Potential habitat for the federally and State-listed blunt-nosed leopard lizard occurs on the Tejon Ranch (approximately MP 15) and between approximately MP 14 and MP 22.48. Due to the lack of species-specific surveys, presence of this species was assumed within potential habitat. It also was assumed that construction and maintenance activities could occur at any time of year, and animals may not be readily able to flee the disturbance area during winter. The blunt-nosed leopard lizard is a fully-protected State endangered species. As such, CDFG cannot authorize any take of this species, and any impacts would be considered Class I (Jones, pers. comm. 2004). Even if lizards themselves may avoid disturbance, adverse effects on habitat are possible. EPNG would implement the measures provided in Appendix D, Protection Measures for Special Status Wildlife and Plants during Construction.

Mitigation for Impact BIO-4:

MM BIO-4a. ***Pre-Construction and Pre-Maintenance Surveys.*** *Prior to the issuance of the Notice to Proceed, the Applicant would conduct pre-construction surveys for the blunt-nosed leopard lizard in areas that are likely to be occupied by this species. When maintenance is planned, the Applicant would conduct pre-maintenance surveys for the blunt-nosed leopard lizard. These surveys would be conducted according to established protocols accepted by USFWS and CDFG.*

MM BIO-4b. ***Avoidance of Occupied Burrows.*** *Construction activities would avoid all burrows found during pre-construction and maintenance surveys that are likely to house blunt-nosed leopard lizards (or other listed species). (While the USFWS may permit the excavation of occupied burrows to move animals out of harm's way, the CDFG does not.)*

MM BIO-4c. ***Fencing.*** *Following pre-construction and pre-maintenance surveys, EPNG would fence-off the ROW, or portions of the ROW to minimize the potential for special-status wildlife usage through the Project area. Specific details of fencing would be as described in Appendix D: Protection Measures for Special Status Wildlife and Plants During Construction. This fencing would be removed when construction is completed.*

MM BIO-4d. ***Offsite Mitigation.*** *If some burrows cannot be avoided by construction and maintenance activities, the Applicant would provide offsite habitat improvements or habitat acquisitions at ratios ranging from 5:1 for new disturbance in critical habitat 3:1 where overlapping previously disturbed critical habitat 1:1 for all non-critical habitat, or at ratios or mitigation fees stipulated by BLM, USFWS in the Biological Opinion for this Project, or by CDFG in the Incidental Take Permit pursuant to Section 2081 of the California Fish and Game Code. At EPNG's discretion, for all listed species affected by this Project, EPNG would either (1) acquire the compensation lands and deliver the deed to BLM or CDFG; (2) provide adequate funds, to be determined by the BLM, to BLM or CDFG for the acquisition of compensation lands or for other activities approved by USFWS; or (3) make permanent improvements to listed species habitat upon agreement of CDFG, USFWS and BLM. If acquiring lands (option 1 above), the EPNG would work closely with BLM and CDFG in selecting the lands benefiting conservation and recovery efforts. Compensation requirements may be paid subsequent to the year-end report.*

MM BIO-4e. ***TES Species Education Program.*** *All EPNG employees and its contractors involved with pipeline inspections and maintenance activities would be required to take a threatened and endangered species (TES) education program which covers all of the species identified as potentially present in the Project Area. The program would be approved by the BLM in consultation with USFWS and CDFG, and would be presented by a person knowledgeable about the biology of the covered species. All maintenance and monitoring employees would participate in the education program prior to initiation of activities. New employees would receive formal, approved training prior to working onsite. At a minimum, the program would cover the distribution of listed species, general behavior and ecology of these species, their sensitivity to human activities, their legal protection, the penalties for violation of State and Federal laws, reporting requirements, and Project mitigation measures. A fact sheet containing this information would also be prepared and distributed. Upon completion of the orientation, employees would sign a form stating that they attended the program and understand all protection measures. These forms would be filed at Applicant's offices and would be made available to CDFG upon request. In addition, the program*

would include fire prevention measures to be implemented by employees during Project activities.

MM BIO-4f. ***Reports of Encounters with Listed Species.*** *Encounters with a listed species would be reported to the environmental monitor or authorized biologist. These monitors would maintain records of all listed species encountered during Project activities. This information would include for each individual: the locations (narrative, vegetation type, and maps) and dates of observations; general conditions and health; any apparent injuries and state of healing; if moved, the location from which it was captured and the location in which it was released; diagnostic markings, for example, identification numbers or a photograph.*

Biological monitors and authorized biologists would be given the phone numbers of all BLM, USFWS, and CDFG personnel responsible for overseeing this Project. If monitors witness violations of the terms and conditions of the biological opinion for the Project, they would bring these issues to the attention of the lead authorized biologist or field contact representative (FCR) on duty during oversight of a specific project. If a resolution of the issue is not reached as a result of discussions in the field, the biological monitors may contact agency personnel with their concerns. Agency personnel would discuss these issues with the FCR and other biological monitors to try and resolve the issues. The identity of biological monitors who come to agency personnel with issues concerning Project activities would remain confidential. Biological monitors would not be fired for breaking their chain of command in coming to agency personnel unless written approval is given by BLM.

MM BIO-4g. ***Handling by a Qualified Biologist.*** *Only personnel authorized by USFWS or CDFG may handle listed species. Each of the Biologists would have appropriate qualifications and would be approved by the CDFG and USFWS at least 30 days prior to any ground disturbing activities. The Biologists would ensure compliance with the management measures provided in this permit.*

MM BIO-4h. ***Qualified Biologist's Authority.*** *The authorized biologists would have authority to immediately stop any activity that is not in compliance with the*

Biological Opinion or the Section 2081 permit, and to order any reasonable measures to avoid the take of an individual of a Covered Species. Neither the Biologist(s), nor BLM, USFWS, or CDFG would be liable for any costs incurred in complying with the management measures, including cease-work orders.

MM BIO-4i. ***Reports of Dead or Injured Animals.*** *Upon locating a dead or injured individual of a listed species, the Applicant would notify the on-site monitor and also notify CDFG and USFWS within 3 working days of the discovery. The notification must be made in writing to the USFWS's Division of Law Enforcement in Torrance (370 Amapola Avenue, Suite 114, Torrance, California 90501, 310/328-1516); and by telephone and writing to the Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California 93003, 805/644-1766). Notification to CDFG would be made to Ms. Rebecca Jones, Environmental Scientist, 36431 41st Street East, Palmdale, CA 93552, (661) 285-5867, unless otherwise determined. The report would include the date and time of the finding or incident (if known), location of the carcass, a photograph, cause of death (if known), and other pertinent information. Animals injured through EPNG activities would be transported to a qualified veterinarian for treatment at the expense of EPNG. If an injured animal recovers, the CDFG would be contacted for final disposition of the animal.*

MM BIO-4j. ***Existing Travel Routes.*** *Existing routes of travel to and from the maintenance and inspection sites would be used. Cross-country use of vehicles and equipment would be strictly prohibited.*

MM BIO-4k. ***Trash Control.*** *Trash and food items would be contained in closed containers and removed daily to reduce their attractiveness to opportunistic predators such as common ravens (Corvus corax), coyotes (Canis latrans), and feral dogs.*

MM BIO-4l. ***Pet Restrictions.*** *Employees would be prohibited from bringing pets to any Project site/area.*

MM BIO-4m. ***Firearms Restrictions.*** *Firearms, bows and arrows, crossbows, and slingshots would be prohibited from the Project site/area.*

MM BIO-4n. ***Removal of Equipment and Unused Materials.*** *Upon completion of construction activities and each maintenance action on the ROW, all unused material and equipment would be removed from the site and disposed of properly. Construction refuse includes, but is not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes. This condition does not apply to fenced compressor station sites.*

MM BIO-4o. ***Hazardous Material Control.*** *Any fuel or hazardous waste leaks or spills would be stopped/repaired immediately and cleaned up at the time of occurrence in accordance with the EPNG's SPCC Plan. Any spills in would be reported to the appropriate BLM field office within 24 hours. The storage and handling of hazardous materials would be excluded from the construction zone in areas within 100 feet of active burrows of Federally or State-listed species and wash crossings. Any unused or leftover hazardous products would be properly disposed of offsite.*

MM BIO-4p. ***Re-contouring and Re-vegetation.*** *After construction, the construction right-of-way would be recontoured to match as closely as possible the original contours of the area. The provisions of the Upland Erosion Control, Revegetation, and Maintenance Plan would be implemented. For activities in blunt-nosed leopard lizard (BNLL) habitat, EPNG would stockpile any native vegetation grubbed or bladed from the Project site. Following completion of the Project, this stockpiled vegetation would be randomly spread across the recontoured site, in addtion to other re-vegetation measures.*

MM BIO-4q. ***Annual List of Proposed Activities.*** *In January of each year, beginning in 2004, EPNG would submit a list of proposed activities by name, category, location, and approximate start date to the BLM, California Desert District Office, 6221 Box Springs Boulevard, Riverside, California 92507, Attention: Pipeline Projects. EPNG would also forward the list of activities to the USFWS and CDFG. The CDFG representative would be Ms. Rebecca Jones, Environmental Scientist, 36431 41st Street East, Palmdale, CA 93552, (661) 285-5867, unless otherwise determined. This notification would designate a representative responsible for communications with BLM, CDFG, and USFWS and for overseeing compliance with this permit. BLM, CDFG, and USFWS would be notified in writing of the representative's name, business*

address and telephone number, and would be notified in writing if a substitute representative is designated. The agencies would have 30 days following receipt of the report to reject the proposed action. However, activities in BNLL habitat would require written authorization from BLM prior to the initiation of surface-disturbing activities. In the event of a rejection, EPNG would work with the agencies to resolve issues. Agency approval of the proposed list of projects is valid for 1 year after agency acceptance.

MM BIO-4r. ***Avoidance Scheduling.*** *The Applicant would avoid evening and night work in the San Joaquin Valley to the extent possible. Within the San Joaquin Valley, maintenance actions during evening hours would be minimized and work would not occur at night unless it is an emergency***.**

MM BIO-4s. ***Emergency Action.*** *For emergency situations involving a pipeline leak or spill or any other immediate safety hazard, EPNG would notify the appropriate BLM field office within 24 hours. As a part of this emergency response, the BLM, USFWS, and CDFG may require specific measures to protect listed species. During cleanup and repair, the agencies also may require measures to recover damaged habitats.*

Rationale for Mitigation. These mitigation measures would reduce the potential for direct impacts to the blunt-nosed leopard lizard, a fully-protected State endangered species, by identifying locations with the species present, avoidance of burrows and species habitat, and placing of fencing around construction sites to minimize entry of inidividuals. These measures provide for onsite restoration of species habitat and offsite mitigation for impacts to burrows. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the BNLL.

Impact BIO-5: Potential Impacts on the Desert Tortoise

Construction and maintenance activities could result in mortality or loss of burrows for the desert tortoise. (Potentially Significant, Class II)

The federally and State-listed desert tortoise could be affected by construction or maintenance activities if burrows or other critical sites are on or near the construction locations. Adverse impacts are possible if burrows or their signs are found up to 0.5 mile away from the construction location (Walker 2000). During habitat surveys, no tortoise burrows were located directly within the construction locations, although an

inactive burrow suitable for use by desert tortoise was observed on the potential future Cadiz interconnect and lateral ROW. Because species-specific surveys were not conducted, desert tortoises are assumed to be present. EPNG would implement the Desert Tortoise Handling Plan (Appendix D7) to reduce impacts on the desert tortoise.

Mitigation for Impact BIO-5:

MM BIO-5a. ***USFWS Protocols***. *The Applicant would implement the provisions of the Field Survey Protocol for Any Federal Action That May Occur within the Range of the Desert Tortoise (USFWS 1992) and the Biological Opinion for this Project. If no desert tortoises or their signs are found within the protocol distance of the construction locations during species-specific surveys, no adverse impacts would be expected.*

MM BIO-5b. ***Equipment, Vehicle, and Pipe Checks.*** *Desert tortoises commonly seek shade during the hot portions of the day. EPNG employees and their contractors working within the geographic range of this species would be required to check their equipment or vehicles before moving them. This provision applies to temporarily stopped vehicles, as well as those parked for longer periods of time. If desert tortoises are encountered, the vehicle would not be moved until such animals have voluntarily moved to a safe distance away from the parked vehicle. A person authorized by the USFWS for this task may move desert tortoises if the tortoises do not voluntarily move away within 15 minutes of first observation.*

Within desert tortoise habitat, any construction pipe, culvert, or similar structure with a diameter of 3 to 12 inches stored on the construction site for one or more nights would be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site.

MM BIO-5c. ***Handling by a Qualified Biologist.*** *Only authorized personnel would move a desert tortoise. One or more Authorized Biologists would have an M.O.U. with CDFG for handling tortoises. Names of all proposed authorized biologists would be submitted to USFWS and BLM for review and approval at least 30 days prior to initiation of any desert tortoise clearance surveys.*

Project activities would not begin until an authorized biologist has been approved.

When a desert tortoise is moved, the qualified biologist would be responsible for taking appropriate measures to ensure that the animal is not exposed to temperature extremes that could be harmful. The authorized personnel would follow the appropriate protocols outlined in Guidelines for Handling Desert Tortoises during Construction Projects (Desert Tortoise Council 1996) when handling desert tortoises or excavating their burrows. Tortoises removed from occupied burrows and relocated to newly constructed burrows would be handled using disposable surgical gloves. The gloves would be disposed of after handling each tortoise. Other equipment would be sterilized or changed between uses. Desert tortoises that are found aboveground and need to be moved from harm's way would be placed in the shade of a shrub. Any desert tortoise removed from a burrow would be placed in an unoccupied burrow of approximately the same size as the one from which it was removed.

MM BIO-5d. ***Pre-construction Sweeps.*** *An Authorized Biologist and/or other biologists approved by CDFG and USFWS (collectively, "Biologists") would perform a pre-construction sweep in desert tortoise habitat and would remain on site during working hours until permanent fencing has been installed to prevent desert tortoises from entering the right-of-way. In addition, the Biologists would be present to perform a pre-construction sweep and would remain on site during working hours until temporary fencing to preclude tortoise from entering work sites in the wash areas has been installed. The Biologists would also be present during the removal of the temporary fencing. Each of the Biologists would have appropriate qualifications and would be approved by CDFG and USFWS at least 30 days prior to any ground disturbing activities. The Biologists would ensure compliance with the management measures provided in this permit. All desert tortoise burrows and pallets that fall outside of, but within 50 feet of the construction work area, would be flagged for avoidance. No stakes or flagging would be placed on the berm or in the mouth of a desert tortoise burrow. Desert tortoise burrows would not be marked in a manner that facilitates poaching. Avoidance flagging would be designed to be easily distinguished from access route or other flagging, and would be designed in consultation with experienced construction personnel and authorized biologists.*

MM BIO-5e. ***Avoidance Scheduling for Routine Road Maintenance.*** *The Applicant would conduct routine road surface maintenance activities during the inactive season of the desert tortoise (October 16 through March 1 and June 16 through August 1) in areas of desert tortoise habitat. Localized repair of major damage may take place throughout the year. Any road maintenance occurring between March 1 and June 15 or between August 1 and October 15 would have a qualified biologist survey the area for tortoises prior to the start of the maintenance activity.*

MM BIO-5f. ***Trench Mitigation Measures.*** *EPNG has the option of erecting desert tortoise fencing in lieu of inspection of open trenches, as specified in Appendix D: Protection Measures for Special Status Wildlife and Plants During Construction in desert tortoise habitat. If a trench is short, EPNG construction or maintenance personnel may monitor the trench. During excavation of trenches or holes, earthen ramps would be provided to facilitate the escape of any wildlife species that may inadvertently become entrapped. The length of pipeline trench left open at any given time would not exceed the length of pipeline segment that would be worked on in one week. Periodic inspections of trenches and holes would be made by biological monitors to ensure that desert tortoises have not become trapped. If tortoises are found within the trench, and would not utilize ramps for escape, an authorized biologist would remove the tortoise from the trench by hand if possible. If safety concerns preclude entry of the trench, the tortoise may be removed with nets or other devices for retrieval. A final inspection of the open trench segment would also be made immediately before backfilling. All open pipe segments would be covered or raised when work activity is not occurring at a site. Trenches must meet the safety requirements of the Occupational Safety and Health Administration before personnel enter open trenches to remove wildlife.*

MM BIO-5g. ***Burrow Excavation for Protective Removal****. All desert tortoise burrows or pallets in the construction zone that cannot be avoided would be excavated or blocked by a qualified biologist. If it becomes necessary to excavate a desert tortoise from its burrow to move it from harm's way, excavation would be done using hand tools, either by or under the direct supervision of an authorized biologist. Excavation of desert tortoise burrows would occur no more than seven days before the onset of maintenance or construction*

activities. All desert tortoises removed from burrows would be placed in an unoccupied burrow of approximately the same size as the one from which it was removed. If an existing burrow is unavailable, the authorized biologist would construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original burrow and situated between 150 and 300 feet from the original burrow. To ensure their safety, desert tortoises moved during inactive periods would be monitored for at least two days after placement in the new burrows or until the end of the job. The authorized biologists would be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.

If desert tortoises need to be moved at a time of day when ambient temperatures could harm them (less than 40 ^{o}F or greater than 90 ^{o}F), they would be held overnight in a clean cardboard box. These desert tortoises would be kept in the care of the authorized biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes would be appropriately discarded after one use.

MM BIO-5h. ***Dust Control.*** *Dust control watering of the right-of-way within desert tortoise habitat would be conducted in a manner that does not result in the ponding of water. If ponding occurs, affected areas would be checked on a regular basis for the presence of tortoises.*

MM BIO-5i. ***Speed Limits.*** *Except on county-maintained roads, vehicle speeds would not exceed 20 miles per hour through desert tortoise habitat.*

MM BIO-5j. ***Implement Mitigation Measure 4j and Additional Treatment Measures.*** *Implementation of these measures would result in the recovery of any injured desert tortoises that are treatable. In addition to the provisions of BIO-4r, CDFG and the USFWS would be notified so they can determine the final disposition of the animal, if the injured tortoise recovers. Notification to the CDFG and the USFWS would occur in writing, within 2 calendar days of the incident. Notification would include the date, time, location and circumstances of the incident.*

MM BIO-5k. ***Implement Mitigation Measures 4e, 4f and 4h—4s.*** *Implementation of these measures would further reduce the risk of construction and maintenance impacts on the desert tortoise.*

Rationale for Mitigation. These mitigation measures would reduce the potential for direct impacts to the desert tortoise, by identifying locations with the species present, avoidance of burrows and species habitat, and placing of fencing around construction sites to minimize entry of inidividuals. These measures provide for onsite restoration of species habitat and offsite mitigation for impacts to burrows. Additionally the measures minimize disturbance from noise and dust to the animals during construction. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the desert tortoise.

Impact BIO-6: Potential Impacts on Other Special-Status Amphibian and Reptile Species

Construction and maintenance activities could result in mortality to other special-status amphibian and reptile species. (Potentially Significant, Class II)

Habitat for the yellow-blotched salamander along the ROW occurs primarily in the area of Tehachapi (Cummings Valley) and the Stallion Springs subdivision. This is the only area that contains oak trees and has dead and down material suitable for salamanders. The ROW in this area has been previously disturbed and does not contain oak trees, although it does contain woody debris and rocks. If present, yellow-blotched salamanders could be adversely affected by trenching activities.

The silvery legless lizard, San Joaquin coachwhip, California horned lizard and Mojave fringe-toed lizard could be affected if individuals inhabit specific construction or maintenance locations at the time of disturbance. EPNG would implement the measures provided in Appendix D Protection Measures for Special Status Wildlife and Plants during Construction.

Mitigation for Impact BIO-6:

MM BIO-6a. ***Fencing Work Areas.*** *During construction and major maintenance activities, the Applicant would fence the work areas to exclude all species of wildlife present in the immediate vicinity of the Project.*

MM BIO-6b. ***Monitoring Open Pits, Trenches, and Pipes.*** *During construction and major maintenance activities, the Applicant would monitor open pits, trenches, and pipes to protect all species of wildlife present.*

MM BIO-6c. ***Capture and Removal.*** *A qualified biologist would inspect the ROW immediately prior to onset of pipeline trenching or other surface disturbing activity in habitat for silvery legless lizard, San Joaquin coachwhip, California horned lizard, and Mojave fringe-toed lizard. A qualified biologist would capture and remove, or chase, any of these species out of the path of construction. Any sightings of these species on the ROW would be reported to the Environmental Inspector. Following the completion of construction, EPNG would submit a report to the CDFG detailing the locations at which any of these species were found, the specific treatment of the individuals (i.e., hazed off ROW or trapped), and the apparent health of each animal identified.*

MM BIO-6d. ***Implement Mitigation Measures 4e and 4i—4s.*** *Implementation of these measures would further reduce the risk of potential impacts on other special-status amphibian and reptile species.*

Rationale for Mitigation. These mitigation measures would reduce the potential for direct impacts to amphibian and reptile species, by identifying locations with the species present, avoidance of species habitat, and placing of fencing around construction sites to minimize entry of inidividuals. These measures provide for onsite restoration of species habitat. Additionally the measures minimize disturbance to the animals during construction. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the species.

Impact BIO-7: Potential Impacts on the San Joaquin Kit Fox

Construction and maintenance activities could result in mortality or loss of dens for the San Joaquin kit fox. (Potentially Significant, Class II)

The San Joaquin kit fox could be affected by construction or maintenance activities if den or other critical sites are within or near the locations of such activities. Construction locations with potential habitat for the San Joaquin kit fox occur from approximately MP 1 through MP 40. If no dens are present within the distance specified in the survey protocol for this species, no adverse effects would occur. If dens are present within the construction locations, significant impacts could occur.

Adverse effects could also occur if pipeline construction and maintenance activities cannot be altered and kit fox dens must be compromised in some instances. This situation would trigger formal consultation, and an incidental take statement would be required under the Endangered Species Act. Because species-specific surveys were not conducted, presence of San Joaquin kit fox dens was assumed. Therefore, this Project may adversely affect this species. EPNG would implement the measures provided in Appendix D Protection Measures for Special Status Wildlife and Plants during Construction. These measures include closing trenches, pipes, and pits at night; managing food and trash, prohibiting pets, and an employee education program. The Applicant has also committed to pre-construction surveys in order to avoid sensitive areas.

Mitigation for Impact BIO-7:

MM BIO-7a. ***Standardized Recommendations for Protection of San Joaquin Kit Foxes.*** *The Applicant would follow the USFWS Standardized Recommendations for the Protection of San Joaquin Kit Foxes prior to or during any ground disturbance (USFWS 1999). These recommendations include pre-construction surveys, following standardized protocols, and avoidance of habitat disturbance between January 1 and April 30.*

MM BIO-7b. ***Avoidance Measures.*** *The Applicant would avoid activities near known dens to the extent possible. If dens are found within the construction or maintenance locations, the activity location would be adjusted if possible to avoid direct effects. Buffer dimensions would be as stipulated in EPNG's Biological Assessment or in a Biological Opinion issued by the USFWS. In the case of difference, the Biological Opinion would govern.*

MM BIO-7c. ***Buffer Zones.*** *The Applicant would limit activities in buffer zones to vehicle operation and equipment operation on existing roads only.*

MM BIO-7d. ***Agency Guidance.*** *The Applicant would follow agency guidance where dens cannot be avoided. If destruction of a San Joaquin kit fox den cannot be avoided, CDFG and USFWS would be contacted for guidance prior to ground disturbance. With concurrence from these agencies, the subject den may be carefully excavated either by an authorized biologist or under the direct supervision of an authorized biologist to ensure that no animals are trapped*

or injured. Any San Joaquin kit foxes in residence would be allowed to escape unimpeded. The unoccupied den would then be completely destroyed to discourage animals from returning to the site.

Potential dens would be excavated using the same procedures. If a natal den cannot be avoided between August 1 and December 14, it would be hand excavated by a biologist.

MM BIO-7e. ***Implement Mitigation Measures 4d—4s.*** *Implementation of these measures would further reduce the risk of potential impacts on the San Joaquin kit fox.*

MM BIO-7f. ***Implement Mitigation Measures BIO-6a and 6b.*** *Implementation of fencing and monitoring would further reduce the risk of impacts on the San Joaquin kit fox.*

Rationale for Mitigation. These mitigation measures would reduce the potential for direct impacts to the San Joaquin kit fox, by identifying locations with the species present, avoidance of species habitat, and buffers around construction sites. These measures provide for onsite restoration of species habitat. Additionally the measures minimize disturbance to the animals during construction. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the species.

Impact BIO-8: Potential Impacts on the Tipton Kangaroo Rat

Construction and maintenance activities could result in mortality or loss of burrows for the Tipton kangaroo rat. (Potentially Significant, Class II)

Potential habitat for the federally and State-listed Tipton kangaroo rat is present at some construction locations. Because species-specific surveys have not been conducted at these sites, Tipton kangaroo rats were assumed to be present within the ROW in the San Joaquin Valley. Direct mortality could occur if animals are killed or buried in their burrows during construction, killed by vehicle traffic on access roads, or fall into excavated areas from which they cannot escape.

Direct effects on habitat resulting from maintenance activities could occur anywhere between approximately MP 14 and MP 22.5. Three pipeline conversion construction locations between approximately MP 14 and MP 22.5 contain potential habitat for the

Tipton kangaroo rat. An estimated total of 5.94 acres could be disturbed over about 8.5 miles in the vicinity of these mileposts. Direct effects on habitat would be temporary because construction is short-term and each location would be re-vegetated. EPNG would implement the measures provided in Appendix D Protection Measures for Special Status Wildlife and Plants during Construction.

Mitigation for Impact BIO-8:

MM BIO-8a. ***Pre-Construction and Pre-Maintenance Surveys.*** *The Applicant would conduct pre-construction and pre-maintenance surveys for the Tipton kangaroo rat in its habitat, including the use of fiber-optic viewing scopes to determine whether burrows are actually occupied; if necessary, animals would be moved to a safe location by a properly permitted biologist.*

MM BIO-8b. ***Avoidance Measures.*** *To the extent possible, all burrows known or likely to be used by Tipton kangaroo rats would be avoided during construction and maintenance activities.*

MM BIO-8c. ***Capture and Removal.*** *When burrows known to be used by Tipton kangaroo rats cannot be avoided, individuals of this species would be captured and moved to a safe location by a properly permitted biologist.*

MM BIO-8d. ***Implement Mitigation Measures 4d—4s.*** *Implementation of these measures would reduce the risk of potential impacts on the Tipton kangaroo rat.*

MM BIO-8e. ***Implement Mitigation Measures BIO-6a and 6b.*** *Implementation of fencing and monitoring would further reduce the risk of impacts on the Tipton kangaroo rat.*

Rationale for Mitigation. These mitigation measures would reduce the potential for direct impacts to the Tipton Kangaroo rat, by identifying locations with the species present and avoidance of species habitat. These measures provide for onsite restoration of species habitat. Additionally the measures minimize disturbance to the animals during construction. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the species and to move species potentially impacted.

Impact BIO-9: Potential Impacts on the Mohave Ground Squirrel

Construction and maintenance activities could result in mortality or loss of burrows for the Mohave ground squirrel. (Potentially Significant, Class II).

The Mohave ground squirrel are known to occur at many locations on and near the pipeline between approximately MP 50 and MP 132. Mohave ground squirrels could be adversely affected if important burrows are compromised. EPNG would implement the measures provided in Appendix D Protection Measures for Special Status Wildlife and Plants during Construction.

Mitigation for Impact BIO-9:

MM BIO-9a. ***Pre-Construction and Pre-Maintenance Surveys.*** *Prior to the issuance of the Notice to Proceed, the Applicant would conduct pre-construction surveys for the Mohave ground squirrel in areas that are likely to occupied by this species. When major maintenance is planned, the Applicant would conduct pre-maintenance surveys for the Mojave ground squirrel. These surveys would be conducted according to established protocols accepted by USFWS and CDFG.*

MM BIO-9b. ***Avoidance Measures.*** *The Applicant would avoid known burrows of this species unless such burrows are within the pipeline excavation zone and its immediate access area. If Mohave ground squirrel burrows cannot be avoided, any individuals present would be removed by an authorized biologist*.

MM BIO-9c. ***Implement Mitigation Measures 4d—4s.*** *Implementation of these measures would reduce the risk of potential impacts on the Mohave ground squirrel. Any compensatory mitigation for the Mohave ground squirrel would be accomplished as part of the desert tortoise mitigation since the two species occur in overlapping areas. Actual mitigation fees would be determined based on construction disturbance*.

MM BIO-9d. ***Implement Mitigation Measures BIO-6a and 6b.*** *Implementation of fencing and monitoring would further reduce the risk of impacts on the Mohave ground squirrel.*

Rationale for Mitigation. These mitigation measures would reduce the potential for impacts to the Mohave ground squirrel, by identifying locations with the species present and avoidance of species habitat. These measures provide for onsite restoration of species habitat. Additionally the measures minimize disturbance to the animals during construction. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the species and to move species potentially impacted.

Impact BIO-10: Potential Impacts on Other Special-Status Mammalian Species

Construction and maintenance activities could result in mortality or loss of burrows for other special-status mammalian species. (Potentially Significant, Class II)

Special-status Bats

Habitat for various special-status bat species is present in the vicinity of the Project; however, construction locations are not within or immediately adjacent to caves or rock outcrops. Therefore, construction noise and activities are not likely to disrupt large groups of roosting bats. Trees and buildings that could be used as roosts are adjacent to the pipeline within the Tehachapi Mountains. Bats roosting adjacent to the construction Project area may avoid the noise source or accommodate it, depending on the tolerance of the bat and the distance of the bat to the noise source. Roosting bats may tolerate more noise than most birds. Because construction activities would occur during daylight hours when bats likely would be roosting, these activities are not expected to disrupt the species foraging activities. The Project is not expected to result in any adverse impacts on bat species, whether roosting or foraging.

Short-Nosed Kangaroo Rat

Potential habitat for the short-nosed kangaroo rat is present at some construction locations. Because species-specific surveys have not been conducted at these sites, short-nosed kangaroo rats were assumed to be present within the ROW in the San Joaquin Valley. Direct mortality may occur if individuals of this species are killed or buried in their burrows during construction, killed by vehicle traffic on access roads, or fall into excavated areas from which they cannot escape.

Three pipeline conversion construction locations between approximately MP 14 and MP 22.5 contain potential habitat for the short-nosed kangaroo rat. An estimated total of 5.94 acres could be disturbed along approximately 8.5 miles in the vicinity of these mileposts. Direct effects on habitat from construction would be temporary because

construction is short-term and each location would be re-vegetated. Direct effects on habitat for the short-nosed kangaroo rat resulting from maintenance activities could occur anywhere between approximately MP 14 and MP 22.5. These effects would also be short-term.

Tehachapi Pocket Mouse

Potential habitat for the Tehachapi pocket mouse is present within the ROW. Although little specific information is available about the species' actual range, the mitigation measures stipulated below for other species would also protect the Tehachapi pocket mouse.

San Joaquin Pocket Mouse

Potential habitat for the San Joaquin pocket mouse is present at sites between approximately MP 14 and MP 50. Construction and maintenance activities in this area could adversely affect this species.

Southern Grasshopper Mouse and Tulare Grasshopper Mouse

Potential habitat for southern grasshopper mice is present throughout the ROW. Potential habitat for Tulare grasshopper mice is present at sites between MP 0 and MP 22.5. These species could be adversely affected if they are present at construction sites when construction commences, or at areas disturbed by maintenance activities.

Mitigation for Impact BIO-10:

MM BIO-10a. ***Pre-Construction and Pre-Maintenance Surveys.*** *The Applicant would conduct pre-construction and pre-maintenance surveys (for major maintenance activities) in areas that are presumed to be occupied by short-nosed kangaroo rat, Tehachapi pocket mouse, San Joaquin pocket mouse, or Southern or Tulare grasshopper mice.*

MM BIO-10b. ***Avoidance Measures.*** *To the extent possible, the Applicant would avoid known burrows of these species.*

MM BIO-10c. ***Implement Mitigation Measures 4e—4s.*** *Implementation of these measures would reduce the risk of potential impacts on other special-status mammalian species.*

MM BIO-10d. ***Implement Mitigation Measures BIO-6a and 6b.*** *Implementation of fencing and monitoring would further reduce the risk of impacts on other special-status mammalian species.*

Rationale for Mitigation. These mitigation measures would reduce the potential for impacts to the special status mammalian species, by identifying locations with the species present and avoidance of species habitat. These measures provide for onsite restoration of species habitat. Additionally the measures minimize disturbance to the animals during construction. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the species and to move species potentially impacted.

Impact BIO-11: Potential Impacts on Federally or State-Listed Birds of Riparian Habitats

Maintenance activities could result in reduced reproductive success for Yuma clapper rail, southwestern willow flycatcher, elf owl, Gila woodpecker, and western yellow-billed cuckoo. (Potentially Significant, Class II)

Habitat for Yuma clapper rail, southwestern willow flycatcher, elf owl, Gila woodpecker, and western yellow-billed cuckoo is present in the vicinity of the ROW between MP 301.5 and 303.25. No construction activities are proposed within 0.25 mile of the habitat identified for these species along the Colorado River. Therefore, no adverse effects are anticipated as a result of conversion operations. However, noise from maintenance activities between MP 301.5 and 303.25 could potentially affect these species.

Mitigation for Impact BIO-11:

MM BIO-11. ***Avoidance Scheduling.*** *The Applicant would schedule regular maintenance activities to be conducted between MP 301.5 and MP 303.25 from September 15 through April 14 (outside the breeding seasons for these species).*

Rationale for Mitigation. These mitigation measures would reduce the potential for impacts to State-listed birds of riparian habitats through avoidance of riparian habitat during the breeding season of the birds. Noise from construction and maintenance activities would, therefore, only temporarily impact these species.

Impact BIO-12: Potential Impacts on Special-Status Raptor Species and Their

Nesting Habitat

Construction and maintenance activities could result in mortality or nest loss for burrowing owls and in reduced reproductive success or loss of nesting habitat for other special-status raptor species. (Potentially Significant, Class II)

Breeding habitat for several special-status raptor species is present along the ROW. The Swainson's hawk, golden eagle, and northern harrier could be expected to breed in areas adjacent to the pipeline ROW. There is no nesting structure within the previously disturbed ROW for any of these species, and there is no nesting habitat for a Swainson's hawk closer than 0.25 mile to any proposed construction location. For this reason, proposed construction activities would not directly affect habitat for these species; however, disturbance may affect their reproductive success in a worst-case scenario.

Burrowing owls could be affected if they are present during construction or maintenance activities. Some habitat, such as California ground squirrel burrows on the Tejon Ranch, could be adversely affected; however, it is possible to avoid direct effects through careful Project implementation. Burrowing owls were also observed in the agricultural fields near Blythe; however, no burrows were observed on or near survey areas on the ROW.

Generally, burrowing owls are expected to flush the area during construction or maintenance operations due to the disturbance. They would be expected to return to the area a short time after activities cease. All of the construction locations between approximately MP 292 and MP 303.4 are adjacent to busy farm roads, where burrowing owls appear to be accustomed to this traffic. Pipeline work activities should be similar to background activities and noise levels, and therefore would not result in an adverse effect.

Mitigation for Impact BIO-12:

MM BIO-12a. ***Pre-Construction and Pre-Maintenance Surveys.*** *At the beginning of the nesting season, or 30 days prior to the initiation of construction activities at a site (whichever is closer to the construction period), the Applicant would conduct pre-construction surveys for raptor nests in areas that are likely to be occupied by these species. When major maintenance is planned, the Applicant would conduct pre-maintenance surveys for raptor nests. These*

surveys would be conducted according to established protocols accepted by USFWS and CDFG.

MM BIO-12b. ***Avoidance Measures.*** *If any protected raptor nests are discovered during such surveys, the Applicant would implement all avoidance and mitigation currently stipulated by USFWS and CDFG. No work would be completed within 1,200 feet of the nest without approval from CDFG and an authorized raptor biologist monitoring the nesting birds. These measures would be initiated prior to the initiation of construction or maintenance activities in the vicinity of the nest. These measures would be continued for as long as Project construction or maintenance actives continue, or until the end of the breeding season for this raptor.*

MM BIO-12c. ***Burrowing Owl Mitigation Measures.*** *The Applicant would implement mitigation measures from the California Burrowing Owl Consortium's Burrowing Owl Survey Protocol and Mitigation Guidelines, including, but not limited to, "passively relocating" owls during pre-construction surveys. The timing of the burrowing owl relocation is critical and cannot occur during this species' breeding season (February through August). All necessary owl relocation would occur prior to February. Where the tortoise and owl pre-construction surveys are completed concurrently, all burrows (tortoise and owl) occurring on the ROW would be collapsed to prevent reestablishment of the two species on the ROW. However, if construction activities are delayed, EPNG may need to separate the burrowing owl and desert tortoise surveys to complete the burrowing owl surveys/relocations prior to the breeding season (February). If separate surveys are necessary, EPNG would only collapse those burrows that contain active burrowing owls and abandoned tortoise burrows; active tortoise burrows would be left intact and treated later, during the tortoise surveys. For new burrows EPNG would either construct artificial burrows to which the owls would be relocated or would use naturally occurring, abandoned desert tortoise burrows. Following completion of the pre-construction survey, EPNG would submit a report to the BLM and CDFG detailing the number of active burrowing owls found, their apparent health, and treatment.*

Rationale for Mitigation. These mitigation measures would reduce the potential for impacts to the burrowing owl, by identifying locations with the species present and

avoidance of species habitat. These measures provide for onsite restoration of species habitat. Additionally the measures minimize disturbance to the animals during construction. Qualified biologists will ensure that all mitigation is applied in a way to minimize impacts to the species.

BIO-13: Potential Impacts on Habitat for Other Special-Status Bird Species

Construction and maintenance activities could result in reduced reproductive success or nest loss for certain other special-status bird species, including loggerhead shrike, Lewis's woodpecker, Costa's hummingbird, Bendire's thrasher, Crissal thrasher, LeConte's thrasher, and hepatic tanager. (Potentially Significant, Class II)

Potential breeding habitat is present in the Project vicinity for the loggerhead shrike and Lewis's woodpecker. Costa's hummingbird could breed in areas adjacent to the pipeline ROW. Crissal and Le Conte's thrashers could nest in woody desert wash vegetation where it is present in the vicinity of the ROW. There is no nesting structure within the previously disturbed ROW for any of these species. There is potential breeding structure for loggerhead shrike, Lewis's woodpecker, Costa's hummingbird, and Bendire's thrasher within 0.25 mile of proposed construction locations. For this reason, proposed construction activities would not directly affect habitat for these species; however, noise disturbance may potentially affect their reproductive success. If suitable vegetation establishes in or adjacent to the ROW during the operating life of the pipeline, maintenance activities could affect nesting individuals of these species.

Mitigation for Impact BIO-13:

MM BIO-13a. ***Pre-Construction and Pre-Maintenance Surveys.*** *At the beginning of the nesting season, or 30 days prior to the initiation of construction activities at a site (whichever is closer to the construction period), the Applicant conduct pre-construction surveys for nesting birds. When major maintenance is planned, the Applicant would conduct pre-maintenance surveys for nesting birds. These surveys would be conducted during breeding seasons for any special-status birds potentially present in the construction or maintenance sites.*

MM BIO-13b. ***Avoidance Measures.*** *If pre-construction or pre-maintenance surveys reveal the presence of a potentially active nest for one of the species identified in this impact, the Applicant would implement avoidance measures*

by (1) fencing off the nesting area to protect it from damage if this can be done successfully or (2) postponing activities until the offspring have fledged.

MM BIO-13c. ***Additional Measures.*** *If Bendire's thrasher is found to be nesting and work would take place within 1,000 feet of the nest, the CDFG would be contacted to determine appropriate mitigation for this species.*

Rationale for Mitigation. These mitigation measures would identify areas where special-status bird species are present, and avoid, where possible, impacts on the bird species. The measures also require identification and reporting of any direct impacts that do occur.

Impact BIO-14: Potential Impacts on Federally or State-Listed Plant Species

Maintenance activities could result in mortality to federally or State-listed plant species. (Potentially Significant, Class II)

Although no impacts on federally or State-listed plant species are expected to occur during construction, habitat for such species was identified at certain locations along the ROW. During the operating life of the pipeline, such species could establish within the ROW in areas subject to maintenance activities.

Mitigation for Impact BIO-14:

MM BIO-14a. Pre-Maintenance Surveys. *The Applicant would conduct pre-maintenance surveys for federally and State-listed plant species in areas where habitat for such species is present. These surveys would be conducted either (1) during the flowering season preceding the maintenance activity, or (2) at least 30 days prior to the initiation of maintenance activities during a season when the target species is identifiable. The Applicant would map habitat of these species along the ROW and provide these maps and pictures of the species to maintenance crews. If any of these species are present at a site scheduled for maintenance work, maintenance activities would avoid the populations, or be conducted at times when annual species are not growing.*

MM BIO-14b. Avoidance Measures or Other Agency-Recommended Mitigation Measures. *To the extent possible, potential impacts to federaly and State listed plant species from maintenance activities would be avoided by avoiding*

populations of these species or by conducting maintenance activities at times when annual species are not growing. If a population cannot be avoided, species-specific on-site restoration or off-site mitigation would be implemented as described in the Protection Measures for Special-Status Plant Species.

MM BIO-14c. Seed Collection. *Ripe seed for use in re-seeding may be collected from populations expected to be impacted, if a special-status plant species cannot be avoided. This measure would be implemented only for species designated by CDFG or USFWS, as described in the UECRM Plan and the Protection Measures for Special-Status Plant Species.*

MM BIO-14d. Re-seeding with Special-Status Species. *Following the completion of construction activities, the ROW in the vicinity of the known individual/population would be restored according to the UECRM Plan. Following the completion of the surface preparation, the reserve seeds would be spread over an approximate area that previously contained the species prior to disturbance. The seeds would be hand sown into the bottoms of imprint depressions and covered with not more than one-half inch of soil. EPNG would monitor revegetation efforts for six years. If abundance of the targeted species is not equivalent to the pre-construction abundance, EPNG would provide monetary compensation to CDFG, potentially through the acquisition of additional lands for CDFG. The amount and type of compensation in California would be determined in consultation with CDFG and pursuant to the Incidental Take Permit under Section 2018 of the California Fish and Game Code. Enhancement and management (endowment) fees would be applied to all mitigation lands in California.*

Rationale for Mitigation. These mitigation measures would reduce the potential for impacts to Federally or State-listed plant species, identify and report any direct impacts that do occur, and provide for on-site or off-site mitigation for impacts. Seed collection and reseeding would restore maintenance areas to pre-Project conditions and make any impact temporary in nature.

Impact BIO-15: Potential Impacts on Other Special-Status Plant Species

Maintenance activities could result in mortality to other special-status plant species. (Potentially Significant, Class II)

Although impacts on other special-status plant species are not expected to occur during construction, habitat for such species was identified at certain locations along the ROW. During the operating life of the pipeline, such species could establish within the ROW in areas subject to maintenance activities.

Mitigation for Impact BIO-15:

MM BIO-15. ***Implement Mitigation Measures BIO-14a through 14d.*** *To the extent possible, potential impacts from maintenance activities would be avoided by avoiding populations of these species or by conducting maintenance activities at times when annual species are not growing.*

Rationale for Mitigation. These mitigation measures would reduce the potential for impacts to other special-status plant species, identify and report any direct impacts that do occur, and provide for on-site or off-site mitigation for impacts.

Impact BIO-16: Potential Impacts on Desert Succulent Species

Construction activities could result in mortality to desert succulent species which are protected under various county ordinances and BLM policies (Potentially Significant, Class II)

Joshua trees and prickly-pear or cholla species were identified at certain locations along the ROW. These species could be impacted by construction activities.

Mitigation for Impact BIO-16:

MM BIO-16. ***Salvage Desert Succulent Species.*** *All cactus, yucca, and agave species within disturbance areas would be avoided, transplanted adjacent to the disturbance area, and/or re-transplanted back into the disturbance area after surface disturbing activities are completed. In California, up to 50 percent of the cacti, yucca, and agave species that cannot be avoided by temporary or long-term disturbance would be transported to a BLM-designated facility. Detailed management measures for these species are included in the UECRM Plan.*

Rationale for Mitigation. These mitigation measures would reduce the potential for impacts to desert succulent species, identify and report any direct impacts that do occur, and provide for on-site or off-site salvage of these species.

Table 4.2-6 presents a summary of impacts on biological resources and recommended mitigation measures.

Table 4.2-6. Summary of Impacts and Mitigation Measures for Biological Resources

Impact	Mitigation Measures
BIO-1: Temporary Disturbance of Wetlands	**BIO-1.** Restoration Plan
BIO-2: Possible Spread of Noxious Weeds	**BIO-2a**. Weed Control
BIO-3: Potential Impacts on the San Emigdio Blue Butterfly from Maintenance Activities	**BIO-3a.** Pre-Maintenance Surveys **BIO-3b.** Avoidance and Minimization Measures
BIO-4: Potential Impacts on the Blunt-Nosed Leopard Lizard	**BIO-4a.** Pre-Construction and Pre-maintenance Surveys **BIO-4b.** Avoidance of Occupied Burrows **BIO-4c.** Fencing **BIO-4d.** Offsite Mitigation **BIO-4e.** TES Species Education Program **BIO-4f.** Reports of Encounters with Listed

	Species **BIO-4g.** Handling by a Qualified Biologist **BIO-4h.** Qualified Biologist's Authority **BIO-4i.** Reports of Dead or Injured Animals **BIO-4j.** Existing Travel Routes **BIO-4k.** Trash Control **BIO-4l.** Pet Restrictions **BIO-4m.** Firearms Restrictions **BIO-4n.** Removal of Equipment and Unused Materials **BIO-4o.** Hazardous Material Control **BIO-4p.** Re-contouring and Re-vegetation **BIO-4q.** Annual List of Proposed Activities **BIO-4r.** Avoidance Scheduling **BIO-4s.** Emergency Action
BIO-5: Potential Impacts on the Desert Tortoise	**BIO-5a.** USFWS Protocols **BIO-5b.** Equipment, Vehicle, and Pipe Checks **BIO-5c.** Handling by a Qualified Biologist **BIO-5d.** Pre-construction Sweeps **BIO-5e.** Avoidance Scheduling for Routine Road Maintenance **BIO-5f.** Trench Mitigation Measures **BIO-5g.** Burrow Excavation for Protective Removal **BIO-5h**. Dust Control **BIO-5i.** Speed Limits **BIO-5j.** Implement Mitigation Measure 4i and Additional Treatment Measures **BIO-5k**. Implement Mitigation Measures BIO-4e, 4f, and BIO 4k—4s

BIO-6: Potential Impacts on Other Special-Status Amphibian and Reptile Species	**BIO-6a.** Fencing Work Areas **BIO-6b**. Monitoring Open Pits, Trenches, and Pipes **BIO-6c.** Capture and Removal **BIO-6d.** Implement Mitigation Measures BIO- 4e and BIO-4h—4s
BIO-7: Potential Impacts on the San Joaquin Kit Fox	**BIO-7a.** Standardized Recommendations for the Protection of San Joaquin Kit Foxes **BIO-7b.** Avoidance Measures **BIO-7c.** Buffer Zones **BIO-7d.** Agency Guidance **BIO-7e.** Implement Mitigation Measures BIO-4d—4s **BIO-7f.** Implement Mitigation Measures BIO-6a and 6b.
BIO-8: Potential Impacts on the Tipton Kangaroo Rat	**BIO-8a.** Pre-Construction and Pre-Maintenance Surveys **BIO-8b.** Avoidance Measures **BIO-8c.** Capture and Removal **BIO8d.** Implement Mitigation Measures BIO-4d—4s **BIO-8e.** Implement Mitigation Measures BIO 6a and 6b.
BIO-9: Potential Impacts on the Mohave Ground Squirrel	**BIO-9a.** Pre-Construction and Pre-Maintenance Surveys **BIO-9b.** Avoidance Measures **BIO-9c.** Implement Mitigation Measures BIO-4d—4s
BIO-10: Potential Impacts on Other Special-Status Mammal Species	**BIO-10a.** Pre-Construction and Pre-Maintenance Surveys **BIO-10b**. Avoidance Measures **BIO-10c.** Implement Mitigation Measures BIO-4e—4s

	BIO-10d. Implement Mitigation Measures BIO-6a and 6b.
BIO-11: Potential Impacts on Federally or State-Listed Birds of Riparian Habitats	**BIO-11.** Avoidance Scheduling
BIO-12: Potential Impacts on Special-Status Raptor Species and their Nesting Habitat	**BIO-12a.** Pre-Construction and Pre-Maintenance Surveys **BIO-12b.** Avoidance Measures **BIO-12c.** Burrowing Owl Mitigation Measures
BIO-13: Potential Impacts on Habitat for Other Special-Status Bird Species	**BIO-13a.** Pre-Construction and Pre-Maintenance Surveys **BIO-13b.** Avoidance Measures **BIO-13c.** Additional Measures
BIO-14: Potential Impacts on Federally or State-Listed Plant Species	**BIO-14a.** Pre-Maintenance Surveys **BIO-14b.** Avoidance Measures or Other Agency-Recommended Mitigation Measures **BIO-14c.** Seed Collection. **BIO-14d.** Re-seeding with Special-Status Species.
BIO-15: Potential Impacts on Other Special-Status Plant Species	**BIO-15.** Implement Mitigation Measures BIO-14a through 14d
BIO-16: Potential Impacts on Desert Succulent Species	**BIO-16.** Salvage Desert Succulent Species.

4.2.5 Cumulative Impacts

In addition to the proposed Project, other projects may contribute to cumulative impacts on biological resources in the vicinity of the Project. Those projects potentially contributing to cumulative impacts are discussed in Section 5.5, Summary of Cumulative Impacts. When projects are constructed at the same time, or are timed closely together, or affect special-status species before they recover fully from the impacts of the proposed Project they can result in a cumulative impact on vegetation, wildlife, and wetlands in an area. This is particularly true for desert and semi-desert

vegetation due to the slow regeneration of vegetation in arid environments. Increased stress can occur on wildlife whose vegetation and habitat is disturbed over larger areas than those affected solely by the proposed Project.

The permanent ROW for the proposed Project is an already existing and maintained ROW. Therefore, the operation of the Project is not likely to permanently change the vegetation and wildlife communities currently existing in the Project area. No permanent impacts would result to wetlands due to construction of the Project because construction would occur when the wetlands are not wetted and the wetlands would be restored as outlined in Section 4.2.4, Impact Analysis and Mitigation. Construction ROWs and temporary work space areas associated with the Project would result in short-term impacts to vegetation and to potentially special-status plant and animal species in the Project area, as discussed in Section 4.2.4, Impact Analysis and Mitigation.

All of the projects in the vicinity of the proposed Project would involve mitigation measures similar to those suggested in this analysis; these measures would be designed to minimize the potential for short- and long-term impacts on native vegetation and wildlife. Any potential cumulative impacts would, therefore, be minimized by the implementation of mitigation measures, including those stipulated by USFWS and CDFG. Compensatory offsite mitigation or avoidance would likely be required by these agencies for any projects that would affect habitat functions for any special-status species, including the desert tortoise, blunt-nosed leopard lizard, Tipton kangaroo rat, San Joaquin Kit fox, and other sensitive species. These and other mitigation measures would reduce any potential cumulative impacts from the proposed Project to less-than-significant levels, except for the blunt-nosed leopard lizard.

4.2.6 Alternatives

No Project Alternative

The No Project Alternative would not convert the former All American crude oil pipeline system to a natural gas transmission system. This alternative would not directly affect biological resources.

Ehrenberg to Daggett Alternative

The Ehrenberg to Daggett Alternative would construct only the portion of Line 1903 from MP 132.1 to MP 303.5. Under this alternative, there would be no construction in the San Joaquin Valley or the Tehachapi Mountains. Consequently, no impacts on the special-status species in those physiographic provinces would result. In particular, this alternative would avoid the Class I impact to the blunt-nosed leopard lizard (BIO-4). Impacts described for the proposed Project to vegetation and species found in the Mojave and Sonoran Deserts would be the same under the Ehrenberg to Daggett Alternative.

Affected vegetation acrages would total 208.46 acres. This total includes 162.6 acres that would be temporarily disturbed, of which 59.41 acres are currently undisturbed. 39.02 acres would be permanently maintained as new ROW and 6.84 acres permanently lost to aboveground facilities. Of the fourteen vegetation types and sub-types found along the proposed Project route, nine are found along the Ehrenberg –to Daggett Alternative. In addition, the seasonal wetland at MP 149.10 would be affected by this alternative.

The special status species potentially impacted by the proposed Project include seventy-eight taxa: one invertebrate, two fish, one amphibian, seven reptiles, thirty-two birds, nineteen mammals, and sixteen plants. Of these, twelve are federally-listed (and possibly also State-listed), seven are state-listed but not federally-listed, and fifty-nine are in other special-status categories. Of the special-status species potentially affected by the proposed Project, the Ehrenberg –to Daggett Alternative would potentially impact forty-seven taxa: one invertebrate, two fish, three reptiles, twenty-five birds, ten mammals, and six plants. Of these, seven are federally-listed (and possibly also State-listed), four are State-listed but not federally-listed, and thirty-six are in other special-status categories.

Special-status wildlife species potentially affected by this alternative include: San Emigdio blue butterfly (FSC), bonytail chub (FE, CE), razorback sucker (FE, CE), desert tortoise (FT, CT), Mojave fringe-toed lizard (CSC), rosy boa (FSC), bald eagle (FT, CE, FP), California brown pelican (FE, CE, FP), Yuma clapper rail (FE, CT, FP), southwestern willow flycatcher (FE), Gila woodpecker (CE), elf owl (CE), Swainson's hawk (FSC, CT), burrowing owl (FSC, CSC, BLMS), prairie falcon (FSC, CSC), ferruginous hawk (FSC, CSC), mountain plover (FSC, CSC), northern harrier (CSC),

Costa's hummingbird (FSC), American bittern (FSC), western yellow-billed cuckoo (FC, CE), Sonoran yellow warbler (CSC), snowy egret (FSC), yellow breasted chat (CSC), western least bittern (FSC), loggerhead shrike (FSC, CSC), long-billed curlew (FSC, CSC), summer tanager (CSC), white-faced ibis (FSC, CSC), Bendire's thrasher (FSC), Crissal thrasher (FSC, CSC), pallid bat (CSC, BLMS), pale Townsend's big-eared bat (FSC), Pacific western big-eared bat (FSC), spotted bat (FSC, CSC, BLMS), greater western mastiff bat (FSC, CSC, BLMS), California leaf-nosed bat (CSC, BLMS), small-footed myotis (FSC, BLMS) southern grasshopper mouse (FSC, CSC), Tulare grasshopper mouse (FSC, CSC),and Colorado River cotton rat (CSC).

Special-status plant species potentially affected by this alternative include: crucifixion thorn (CNPS2), Alvord's beehive cactus (CSC, CNPS4), Mojave monkeyflower (FSC, BLMS, CNPS1B), white-margined beardstongue (FSC, CNPS1B). Parish's phacelia (FSC, BLMS, CNPS1B), and Orocopia sage (CNPS1B).

Ehrenberg to Cadiz Alternative

The Ehrenberg to Cadiz Alternative would construct only the portion of Line 1903 from MP 215.75 to MP 303.5. Under this alternative, there would be no construction in the San Joaquin Valley or the Tehachapi Mountains. Consequently, no impacts on the special-status species in those physiographic provinces would result. In particular, this alternative would avoid the Class I impact to the blunt-nosed leopard lizard (BIO-4). Impacts described for the proposed Project to vegetation and species found in the Mojave and Sonoran Deserts would be the same under the Ehrenberg to Cadiz Alternative.

Affected vegetation acreages would total 176.33 acres. This total includes 131.46 acres that would be temporarily disturbed, 5.85 acres permanently lost to aboveground facilities, and 39.02 acres of permanently maintained ROW. Of the fourteen vegetation types and sub-types found along the proposed Project route, nine are found along the Ehrenberg to Cadiz Alternative.

The special status species potentially impacted by the proposed Project include seventy-eight taxa: one invertebrate, two fish, one amphibian, seven reptiles, thirty-two birds, nineteen mammals, and sixteen plants. Of these, twelve are federally-listed (and possibly also State-listed), seven are state-listed but not federally-listed, and fifty-nine are in other special-status categories. Of the special-status species potentially affected

by the proposed Project, the Ehrenberg to Cadiz Alternative would potentially impact forty-two taxa: two fish, three reptiles, twenty-three birds, nine mammals, and five plants. Of these, six are federally-listed (and possibly also State-listed), four are State-listed but not federally-listed, and thirty-six are in other special-status categories.

Special-status wildlife species potentially affected by this alternative include: bonytail chub (FE, CE), razorback sucker (FE, CE), desert tortoise (FT, CT), Mojave fringe-toed lizard (CSC), rosy boa (FSC), California brown pelican (FE, CE, FP), Yuma clapper rail (FE, CT, FP), southwestern willow flycatcher (FE), Gila woodpecker (CE), elf owl (CE), Swainson's hawk (FSC, CT), burrowing owl (FSC, CSC, BLMS), prairie falcon (FSC, CSC), mountain plover (FSC, CSC), northern harrier (CSC), Costa's hummingbird (FSC), American bittern (FSC), western yellow-billed cuckoo (FC, CE), Sonoran yellow warbler (CSC), snowy egret (FSC), yellow breasted chat (CSC), western least bittern (FSC), loggerhead shrike (FSC, CSC), long-billed curlew (FSC, CSC), summer tanager (CSC), white-faced ibis (FSC, CSC), Bendire's thrasher (FSC), Crissal thrasher (FSC, CSC), pallid bat (CSC, BLMS), pale Townsend's big-eared bat (FSC), Pacific western big-eared bat (FSC), spotted bat (FSC, CSC, BLMS), greater western mastiff bat (FSC, CSC, BLMS), California leaf-nosed bat (CSC, BLMS), small-footed myotis (FSC, BLMS) southern grasshopper mouse (FSC, CSC), Tulare grasshopper mouse (FSC, CSC),and Colorado River cotton rat (CSC).

Special-status plant species potentially affected by this alternative include: crucifixion thorn (CNPS2), Alvord's beehive cactus (CSC, CNPS4), Mojave monkeyflower (FSC, BLMS, CNPS1B), white-margined beardstongue (FSC, CNPS1B), and Orocopia sage (CNPS1B).

4.2.7 References

Bickel, R. 2001. Natural Resource Conservation Service Specialist. Electronic mail transmission to D. Richardson (ENSR) May 3, 2001.

Brown, D. E. 1982. Biotic Communities of the American Southwest-United States and Mexico. Desert Plants Vol. 4 (1-4).

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. California Burrowing Owl Consortium.

California Department of Fish and Game (CDFG). 1980. At the Crossroads: A Report on the Status of California's Endangered and Rare Fish and Wildlife. State of California Resources Agency, Fish and Game Commission and Department of Fish and Game.

California Department of Fish and Game (CDFG). 1999. California Natural Diversity Data Base (CNDDB) List of California Terrestrial Natural Communities. State of California Department of Fish and Game, Sacramento, California.

California Department of Fish and Game (CDFG). 2000. California Wildlife Habitat Relationship System. Available at: http://www.dfg.ca.gov/whab.

California Department of Fish and Game (CDFG). 2003. California Natural Diversity Data Base (CNDDB) RareFind3 Report. CDFG Natural Heritage Division. California Department of Fish and Game, Rancho Cordova, California.

California State Lands Commission and the Bureau of Land Management. 1984. Environmental Impact Report/Statement for the Proposed Celeron/All American and Getty Pipelines.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. (FWS/OBS-79/31.) US Government Printing Office. Washington, DC.

Egan, T. 2001. BLM – Barstow Wildlife Biologist. Electronic communication with R. Galeano-Popp, February 22, 2001, regarding wildlife use of playas and bats in the project area.

El Paso Natural Gas. 2003a. Draft Resource Report No. 3 Vegetation and Wildlife. Unpublished report prepared by ENSR. May 2003.

El Paso Natural Gas Company (EPNG). 2003b. Draft Biological Assessment. Unpublished report prepared by ENSR. May 2003.

El Paso Natural Gas Company (EPNG). 2003c. Line No. 1903 Project: Rare Plant Survey. Unpublished report prepared by ENSR. May 2003.

Federal Register. 2003. 50 CFR Part 17 Pages 53083—53101. Withdrawal of the proposed rule to list the mountain plover as threatened. September 9, 2003 (Volume 68, Number 174).

Holland, R. 1986. Preliminary Description of the Terrestrial Natural Communities of California. Unpublished report. California Department of Fish and Game. Sacramento, California.

Jones, B. 2001. California Department of Fish and Game Biologist. Telecommunication with R. Galeano-Popp, dated February 20, 2001.

Jones, B. 2004. California Department of Fish and Game Biologist. Telecommunication with S. Jenkins, S. Mongano, M. Hetrick, D. Tormey, dated August 6, 2004.

Knopf, F. L. 1996. Mountain Plover In: Birds of North America, No. 211. Http://www.birdsofna.org/ excerpts/mplover.htm

Maddux, H. R., L. A. Fitzpatrick, and W. R. Noonan. 1993. Colorado River Endangered Fishes Critical Habitat (Draft Biological Support Document). US Fish and Wildlife Service, Salt Lake City, Utah.

Munz, P. A. 1974. A Flora of Southern California. University of California Press, Berkeley and Los Angeles, California.

National Geographic Society. 1996. A Field Guide to the Birds of North America. Washington, D. C.

Nicol, K. 2001. California Department of Fish and Game Biologist. Telecommunication with and letter from R. Galeano-Popp dated February 22, 2001.

Nicolai, N. C. 1992. Distribution of *Gambelia silus, Ammospermophilus nelsoni, Dipodomys ingens*, and *Vulpes macrotis mutica* in the Southern San Joaquin Valley, California. In: Williams, Byrne, Rado, editors. Endangered and Sensitive Species of the San Joaquin Valley California: Their Biology Management and Conservation. California Energy Commission, Sacramento, California.

Palmer, B. 2000. US Fish and Wildlife Service California Condor Specialist. Telecommunication with R. Galeano-Popp (ENSR) January 9, 2001.

Pruett, P. 2000. Personal Communication with R. Galeano-Popp at ENSR. Paul Pruett & Associates, Bakersfield, California.

Ramirez, R. 2000. Natural Resource Conservation Service Specialist. Telecommunication with D. Richardson (ENSR) dated December 27, 2000.

San Bernardino County (SBC). 1989, 2003. County of San Bernardino Development Code: 89.04, Desert Native Plant Protection. Available at: http://www.sbcounty.gov/landuseservices/DevCode/809-Plant%20Protection%20and%20Management.pdf.

Sawyer, J. O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society. Sacramento, California.

Smith, R. 2003. Personal communication from Robert Smith, USACOE, with G. Lebednik, ENTRIX, Inc. November 6, 2003.

State of California. 2000. California Department of Fish and Game, Sacramento, California. Request for Natural Resource Information, mailed December 6, 2000, by R. Galeano-Popp, ENSR.

Sullivan, C. 2001. US Fish and Wildlife Service (Barstow) Wildlife Biologist. Telecommunication with R. Galeano-Popp, February 20, 2001.

Thomas, T. 2001. US Fish and Wildlife Service (Barstow) Botanist. Personal Communication with R. Galeano-Popp, January 18, 2001.

US Bureau of Land Management (BLM). 1980. The California Desert Conservation Area Plan. Department of Interior Bureau of Land Management, Riverside, California.

US Fish and Wildlife Service (USFWS). 1992. Field Survey Protocol for Any Federal Action That May Occur Within the Range of the Desert Tortoises. Mojave and Great Basin Deserts Division. Barstow, California, 92311.

US Fish and Wildlife Service (USFWS). 1994a. Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp. 50 CFR Part 17. Federal Register September 19, 1994.

US Fish and Wildlife Service (USFWS). 1994b. Five Plants from the San Bernardino Mountains in Southern California Determined to be Threatened or Endangered. 50 CFR Part 17. Federal Register August 24, 1994.

US Fish and Wildlife Service (USFWS). 1998a. Determination of Threatened Status for Four Plants from the Foothills of the Sierra Nevada Mountains in California. 50 CFR Part 17. Federal Register September 14, 1998.

US Fish and Wildlife Service (USFWS). 1998b. Recovery Plan for Upland Species of the San Joaquin Valley, California. Region One. Portland, Oregon.

US Fish and Wildlife Service (USFWS). 1999. Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance. Region One. Sacramento, California.

US Fish and Wildlife Service (USFWS). 1999. Determination of Threatened Status for the Sacramento Splittail. 50 CFR Part 17. Federal Register February 8, 1999.

US Fish and Wildlife Service (USFWS). 2000. Species List for the County dated December 27, 2000 (Consultation No. 1-1-01-SP-611). Provided by K. Miller, USFWS, Sacramento, California Office.

US Fish and Wildlife Service (USFWS). 2001. Species list for the project dated February 27, 2001 (Consultation No. 11430-2001-7SP-1416.1). Provided by N. Gilbert, USFWS Carlsbad, California office.

US Fish and Wildlife Service (USFWS). 2001. Species list for the project dated March 3, 2001 (Consultation No. 2-21-01-I-183). Provided by D. Harlow, USFWS, Phoenix, Arizona office.

US Fish and Wildlife Service (USFWS). 2002. Species List for Kern County dated February 13, 2002 (Consultation No. 1-1-02-SP-0422). Provided by J. Knight, USFWS, Sacramento, California office.

US Fish and Wildlife Service (USFWS). 2001a. Center for Biological Diversity: Groups File Endangered Species Act Listing Petition for Cent Valley Vernal Pool Crustacean. http://biologicaldiversity.org

US Fish and Wildlife Service (USFWS). 2001b. Final Rule to Remove the Aleutian Canada Goose from the Federal List of Endangered and Threatened Wildlife. Federal Register March 20, 2001, Volume 66, No.54.

US Fish and Wildlife Service. 2001a. Center for Biological Diversity: Groups File Endangered Species Act Listing Petition for Cent Valley Vernal Pool Crustacean. http://biologicaldiversity.org

US Fish and Wildlife Service. 2001b. Final Rule to Remove the Aleutian Canada Goose from the Federal List of Endangered and Threatened Wildlife. Federal Register March 20, 2001, Volume 66, No.54.

US Fish and Wildlife Service (USFWS). 2001c. Species list for the project dated January 8, 2001 (Consultation No. not assigned). Provided by D. Noda, USFWS, Ventura, California office.

US Fish and Wildlife Service (USFWS). 2001d. Species list for the project dated August 27, 2001 (Consultation No. not assigned). Provided by D. Noda, USFWS, Ventura, California office.

US Fish and Wildlife Service (USFWS). 2002. http://sacramento.fws.gov

US Fish and Wildlife Service (USFWS). 2002. Kern Primrose Sphinx Moth (*Lepidoptera: Sphingidae*).
http://shanana.berkeley.edu/essig/endins/kernspnx.htm

US Fish and Wildlife Service (USFWS). 2002a. Updated Species List for Line No. 1904 from USFWS Sacramento, California. Dated February 13, 2002.

US Fish and Wildlife Service (USFWS). 2002b. Updated Species List No. 1903 from USFWS Carlsbad, California. March 5, 2002.

US Fish and Wildlife Service (USFWS). 2002c. Updated Species List No. 1903 from USFWS Phoenix, Arizona. March 18, 2002.

US Fish and Wildlife Service (USFWS). 2002d. Kern Primrose Sphinx Moth (*Lepidoptera: Sphingidae*). http://shanana.berkeley.edu/essig/endins/kernspnx.htm

US Fish and Wildlife Service (USFWS). 2002e. http://sacramento.fws.gov

Walker, G. 2000. US Fish and Wildlife Service, Barstow, California office. Request for Natural Resource Information, mailed November 10, 2000, from R. Galeano-Popp, ENSR.

Williams, D. F. 1986. Mammalian Species of Special Concern in California. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.

Yomiko, W. 2001. Wildlife Biologist, Bureau of Land Management, Needles office. Telecommunication with R. Galeano-Popp February 23, 2001.